

S Shelly, J. Stephen  
583.123 Status review of  
N11Lksr Lesquerella  
1988 klausii, U.S.  
Forest Service,  
Region 1, Helen  
and Lewis & Clark

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Status review of Lesquerella klausm U



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STATUS REVIEW OF Lesquerella klausii  
U.S. FOREST SERVICE - REGION 1  
HELENA AND LEWIS & CLARK NATIONAL FORESTS  
MONTANA

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Order No. 40-03H6-8-107

29 February 1988

PLANT RECORD

This is an abridged report

For the full report please contact:

The Montana Natural Heritage Program  
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## I. SPECIES INFORMATION

### A. CLASSIFICATION

1. SCIENTIFIC NAME: Lesquerella klausii R. Rollins.
2. COMMON NAME: Klaus' bladderpod.
3. FAMILY: Brassicaceae (=Cruciferae; Mustard Family).
4. GENUS: Lesquerella klausii is one of approximately 75 species in the genus in North America; of these, most are concentrated in the southwestern United States, in Mexico, and in the Rocky Mountain and intermontane basin region of the western United States (Rollins and Shaw, 1973). Within the genus, L. klausii "...is not easily associated with any other species of Lesquerella"; on the basis of fruit characteristics, "...the species falls in a borderline between Lesquerella and Physaria..." (Rollins, 1984). According to their classification, though, L. klausii "...definitely falls into Lesquerella rather than Physaria" (Rollins and Shaw, 1973; Rollins, 1984).
5. SPECIES: Lesquerella klausii is a recently described species (Rollins, 1984). It was first discovered near Lewis & Clark Pass in 1977, by Klaus H. Lackschewitz, in whose honor the species was named. The type specimen was collected in 1982 by Lackschewitz and David Ramsden, at Rogers Pass. Earlier collections were most often labeled as Physaria geyeri, but Dr. Reed Rollins ultimately determined that they represented a previously undescribed species. In Montana, L. klausii is one of six species reported for the genus (Dorn, 1984; Rollins, 1984).

### B. PRESENT LEGAL OR OTHER FORMAL STATUS

1. FEDERAL STATUS
  - a. U.S. FISH AND WILDLIFE SERVICE: None.
  - b. U.S. FOREST SERVICE: Prior to field work in 1987, Lesquerella klausii had been nominated for the list of proposed sensitive species for Region 1 (Northern Region) of the U.S. Forest Service (Shelly and Lesica, 1986); it was not included on the draft list of such species (Pierce et al., 1987). During 1987, 15 additional occurrences were located, and

the species was not found to be currently threatened or endangered with extinction. However, owing to its restricted geographic distribution (it is endemic to Montana, and thus to Region 1), it is recommended that the species be retained on the Region 1 list. "Watch" list status is appropriate, so that populations will continue to be monitored in the future.

2. STATE: Lesquerella klausii is currently listed by the Montana Natural Heritage Program (Shelly, 1988) as "threatened throughout range" (21-100 occurrences; global rank = G3). In Montana, it is similarly listed as "threatened in state" (state rank = S3).

None of these federal or state ranks currently provide any direct legal protection for L. klausii.

#### C. DESCRIPTION

1. GENERAL NONTECHNICAL DESCRIPTION: Lesquerella klausii is a short-lived perennial herb with stems which are mostly about 4-8 inches tall. They often lie flat on the soil surface, with the flower-bearing tips curved upward. The flowers are yellow, and are abundant. The petals are about  $\frac{1}{2}$  inch long. The basal leaves are clustered together at the top of the taproot, and are about  $\frac{1}{4}$ -1 inch long. The stem leaves are narrow, and about  $\frac{1}{4}$ - $\frac{1}{2}$  inch long. The plants are generally in flower from early May through June, with variation depending on exposure, weather conditions, and altitude. See Section V, p. 76, for color photos of plants and habitat.
2. TECHNICAL DESCRIPTION: Perennial from a taproot, densely stellate pubescent; trichomes loosely spreading, primary rays 3-5, forked, ultimate rays exceptionally long for members of the genus; caudex simple, only slightly enlarged; radical leaves petiolate, entire, 1.5-2.5 cm. (0.6-1.0 in.) long, blade obovate to deltate, petiole slender; cauline leaves oblanceolate to spatulate, 6-9 mm. (0.24-0.35 in.) long; stems erect to decumbent at base, slender, 6-10 cm. (2.4-4.0 in.) high; infructescences loose, 1-3 cm. (0.4-1.2 in.) long; pedicels slender, sigmoid, 5-7 mm. (0.2-0.28 in.) long; siliques broadly obovate, slightly bilobed to nearly truncate above, densely pubescent with spreading trichomes, ca. 4 mm. (0.16 in.) high, ca. 5 mm. (0.2 in.) wide, valves

pubescent on interior; replum narrowly obovate, obtuse above, 2.5-3 mm. (0.1-0.12 in.) long; styles pubescent or glabrous, 3-3.5 mm. (0.12-0.14 in.) long; ovules 2 in each locule; funiculi attached near apex of replum; seeds slightly longer than broad, wingless, thick, ca. 2 mm. (0.08 in.) long, ca. 1.8 mm. (0.07 in.) wide; cotyledons accumbent (Rollins, 1984).

3. LOCAL FIELD CHARACTERS: Other related members of the Brassicaceae which were observed within the range of L. klausii include Lesquerella alpina (Alpine bladderpod) and Physaria didymocarpa (Common twinpod). Lesquerella alpina is distinguished in having generally narrow, entire leaves, generally shorter stems, and less inflated fruits which are often narrowed and flattened at the apex. Physaria didymocarpa is distinguished in having much larger leaves and flowers, and very large inflated fruits. Lesquerella klausii possesses smaller, wide fruits which are notched at the tip. In addition, L. klausii is often restricted to open shale barren slopes, and was only found growing with Physaria didymocarpa in two locations (Red Mountain (023), Bull Run Gulch (016)).

#### D. GEOGRAPHICAL DISTRIBUTION

1. RANGE: Lesquerella klausii is a state endemic, restricted to Lewis & Clark and Meagher Counties in western Montana. It has been located on the Helena and Lewis & Clark National Forests, in Region 1 of the U.S. Forest Service.
2. CURRENT SITES: Lesquerella klausii is recently documented (1986-87) from 27 sites; 24 are in Lewis & Clark County, and three are in Meagher County. The legal descriptions, latitude and longitude, elevations, USGS topographic quad names, and locations of the sites are provided in Table 1. These are subdivided to indicate those sites which occur wholly or partially on U.S. Forest Service lands (Table 1A, pp. 4-8), and those sites which occur on lands of other ownership (Table 1B, p. 9). The distribution in Montana is indicated in Figure 1, p. 10; the exact locations are indicated on the maps provided in Section IV, pp. 57-75. Field surveys were conducted by the author on 10-13 June 1986, and 15 May, 28 May, 2 June, 8-11 June, and 13 and 29 September, 1987.



TABLE 1A. Lesquerella klausii locations wholly or partially occurring on U.S. Forest Service lands, Lewis & Clark and Meagher Counties, Montana.

Occurrence number: 001  
 Site name: HUNTERS GULCH  
 COUNTY: LEWIS & CLARK  
 Township & Range: 012N002W Section: 01 Subsection/additional sections: NW4;2,E2  
 Latitude: 464947 Longitude: 1114834 Elevation: 4280  
 USGS Quad: NELSON  
 Location: HUNTERS GULCH; FROM YORK, TAKE RD. NORTH TO NELSON; AT NELSON, GO WEST 1/4 MI. TO HUNTERS GULCH; SITE IS CA. 3/4-1.0 MI. UP GULCH.

Occurrence number: 002  
 Site name: ALICE CREEK  
 COUNTY: LEWIS & CLARK  
 Township & Range: 016N007W Section: 13 Subsection/additional sections: NW4,14NE4  
 Latitude: 470936 Longitude: 1122624 Elevation: 6000  
 USGS Quad: BLOWOUT MOUNTAIN  
 Location: ALICE CREEK BASIN, CA. 0.5 AIR MI. WEST OF LEWIS AND CLARK PASS, CA. 10 MI. NORTH OF ST. HWY. 200 ON HELENA N.F. RD. #293; "ROADCUT ON E. SLOPE ABOVE ROAD TO PASS" (1977).

Occurrence number: 003  
 Site name: PIKE CREEK  
 COUNTY: LEWIS & CLARK  
 Township & Range: 013N001W Section: 25 Subsection/additional sections: N2;113NRIE:1952,30N2  
 Latitude: 465134 Longitude: 1113940 Elevation: 5800  
 USGS Quad: HOGBACK MOUNTAIN  
 Location: BIG BELT MOUNTAINS, PIKE CREEK; EAST OF NELSON ON BEAVER CREEK RD., NEAR HEAD OF DRAINAGE, CA. 1-2 AIR MILES WEST OF LEWIS & CLARK - MEAGHER COUNTY LINE.

Occurrence number: 004  
 Site name: ROGERS PASS WEST  
 COUNTY: LEWIS & CLARK  
 Township & Range: 015N006W Section: 04 Subsection/additional sections: W2,SNE4,9NW4  
 Latitude: 470443 Longitude: 1122225 Elevation: 5920  
 USGS Quad: ROGERS PASS, CADOTTE CREEK  
 Location: NEAR ST. HWY. 200 AT ROGERS PASS, ON CONTINENTAL DIVIDE; ABOVE HWY. ON WEST SIDE, AND ON SUPROUNDING RIDGES.

Occurrence number: 005  
 Site name: TELEPHONE GULCH  
 COUNTY: LEWIS & CLARK  
 Township & Range: 016N007W Section: 24 Subsection/additional sections: N2  
 Latitude: 470750 Longitude: 1122554 Elevation: 6840  
 USGS Quad: BLOWOUT MOUNTAIN  
 Location: CA. 10 MILES NORTH OF ST. HWY. 200 ON ALICE CREEK ROAD (HELENA NF #293); RIDGE ON N. SIDE OF HEAD OF TELEPHONE GULCH, NW FLANK OF GREEN MOUNTAIN.

TABLE 1A. (cont.).

Occurrence number: #06  
 Site name: BARKING DOG  
 COUNTY: LEWIS & CLARK  
 Township & Range: #12N#01E Section: 17 Subsection/additional sections: N2NE4  
 Latitude: 464024 Longitude: 111374# Elevation: 5240  
 USGS Quad: HOGBACK MOUNTAIN  
 Location: BIG BELT MOUNTAINS, HELENA N.F. ROAD 130 (BEAVER CREEK ROAD)  
 CA. 3 MILES ESE OF INDIAN FLATS GUARD STATION; 0.25 AIR  
 MILES SE OF BARKING DOG, SLOPE NORTH OF INDIAN CREEK.

Occurrence number: #07  
 Site name: NELSON  
 COUNTY: LEWIS & CLARK  
 Township & Range: #12N#02W Section: #01 Subsection/additional sections: E2SE4,12N2NW4  
 Latitude: 464924 Longitude: 1114735 Elevation: 4300  
 USGS Quad: NELSON  
 Location: 0.75-1.0 AIR MILES ENE OF NELSON, 0.05-0.25 AIR MILES NORTH  
 OF BEAVER CREEK RD. (HELENA NF RD 130); ONE SMALL ROADSIDE  
 SITE 0.25 MILES NE OF NELSON.

Occurrence number: #08  
 Site name: REFRIGERATOR CANYON  
 COUNTY: LEWIS & CLARK  
 Township & Range: #13N#01W Section: 28 Subsection/additional sections: E2SE4,27W2SW4  
 Latitude: 465109 Longitude: 1114331 Elevation: 4600  
 USGS Quad: HOGBACK MOUNTAIN  
 Location: BIG BELT MOUNTAINS, DN N SIDE OF BEAVER CREEK ROAD. (HELENA  
 N.F. RD. #130) CA. 0.5 MILES ENE OF REFRIGERATOR CANYON, CA.  
 4.5 MILES NE OF NELSON.

Occurrence number: #10  
 Site name: BLACKSMITH GULCH  
 COUNTY: LEWIS & CLARK  
 Township & Range: #12N#01W Section: 35 Subsection/additional sections: SE4E2  
 Latitude: 464505 Longitude: 1114100 Elevation: 4600  
 USGS Quad: HOGBACK MOUNTAIN  
 Location: BIG BELT MOUNTAINS, BLACKSMITH GULCH, 0.35 AIR MILES W OF  
 TROUT CREEK ROAD (HELENA N.F. RD. #4021). CA. 4 MILES NE OF  
 YORK.

Occurrence number: #11  
 Site name: KELLY GULCH  
 COUNTY: LEWIS & CLARK  
 Township & Range: #11N#01W Section: #04 Subsection/additional sections: SE4SE4  
 Latitude: 464403 Longitude: 1114334 Elevation: 4200  
 USGS Quad: CANYON FERRY  
 Location: BIG BELT MOUNTAINS, E. SIDE OF MOUTH OF KELLY GULCH, 0.1  
 MILE N. OF TROUT CREEK RD. (HELENA N.F. RD. #4021), CA. 1.25  
 MILES NE OF YORK.

TABLE 1A. (cont.).

Occurrence number: #12  
 Site name: PRICES GULCH  
 COUNTY: LEWIS & CLARK  
 Township & Range: #11N#01W Section: 17 Subsection/additional sections: W2NE4  
 Latitude: 464257 Longitude: 1114518 Elevation: 4000  
 USGS Quad: HAUSER LAKE  
 Location: BIG BELT MOUNTAINS, PRICES GULCH, HELENA N.F. ROAD #224,  
 0.1-0.2 MILES E. OF TROUT CREEK RD. (HELENA N.F. RD #4021),  
 JUST S. OF YORK.

Occurrence number: #13  
 Site name: BIG LOG GULCH-HUNTERS GULCH RIDGE  
 COUNTY: LEWIS & CLARK  
 Township & Range: #13N#02W Section: 35 Subsection/additional sections: CENTER.NE4NW4  
 Latitude: 465020 Longitude: 1114910 Elevation: 4900  
 USGS Quad: NELSON  
 Location: BIG BELT MOUNTAINS, GATES OF THE MOUNTAINS WILDERNESS:  
 SLOPES BETWEEN BIG LOG GULCH AND HUNTERS GULCH, CA. 1.6 AIR  
 MI. NNW. OF NELSON.

Occurrence number: #14  
 Site name: SHEEP MOUNTAIN PASS  
 COUNTY: LEWIS & CLARK  
 Township & Range: #13N#01W Section: 20 Subsection/additional sections: N2,21N4S4  
 Latitude: 465216 Longitude: 1114500 Elevation: 6120  
 USGS Quad: HOGBACK MOUNTAIN, NELSON  
 Location: FROM YORK, NORTH ON DRY GULCH ROAD TO BEAVER CREEK ROAD;  
 BEAVER CREEK ROAD TO REFRIGERATER CANYON, AND NORTH ON  
 HIKING TRAIL CA. 2 MILES.

Occurrence number: #15  
 Site name: MOORS CREEK  
 COUNTY: LEWIS & CLARK  
 Township & Range: #13N#01W Section: 20 Subsection/additional sections: E2NW4  
 Latitude: 465136 Longitude: 1114409 Elevation: 5120  
 USGS Quad: HOGBACK MOUNTAIN  
 Location: FROM YORK, NORTH ON DRY GULCH ROAD ABOUT 5.5 MILES TO  
 BEAVER CREEK ROAD; UP BEAVER CREEK RD. CA. 5 MILES TO  
 REFRIGERATOR CANYON, AND CA. 1 MILE NORTH ON HIKING TRAIL.

Occurrence number: #16  
 Site name: BULL RUN GULCH  
 COUNTY: LEWIS & CLARK  
 Township & Range: #12N#01W Section: 33 Subsection/additional sections: N2NE4,28SE4  
 Latitude: 464530 Longitude: 1114404 Elevation: 5120  
 USGS Quad: HOGBACK MOUNTAIN  
 Location: FROM YORK, NORTH ON DRY GULCH ROAD CA. 2.2 MILES TO BULL RUN  
 GULCH, AND UP GULCH (EAST) CA. 1.1 MILES.

TABLE 1A. (cont.).

Occurrence number: 017  
 Site name: SWEATS GULCH  
 COUNTY: LEWIS & CLARK  
 Township & Range: 012N001W Section: 19 Subsection/additional sections: NE4,20W2NWR,17E2SW4+  
 Latitude: 464713 Longitude: 1114615 Elevation: 4960  
 USGS Quad: NELSON  
 Location: TRSCOMM CONT.: 17N2SE4. FROM YORK, NORTH ON DRY GULCH ROAD  
 CA. 3 MILES TO JEEP TRAIL; NORTHEAST ON TRAIL CA. 0.6 MILES  
 TO SITE, ON NORTH SIDE OF SWEATS GULCH.

Occurrence number: 018  
 Site name: KEEPOUT GULCH  
 COUNTY: LEWIS & CLARK  
 Township & Range: 013N002W Section: 26 Subsection/additional sections: NE4  
 Latitude: 465127 Longitude: 1114655 Elevation: 5400  
 USGS Quad: NELSON  
 Location: FROM YORK, NORTH ON DRY GULCH ROAD TO BEAVER CREEK (NELSON);  
 BEAVER CREEK ROAD WEST FOR 0.3 MILES, THEN JEEP TRAIL NORTH  
 CA. 1 MILE AND PACK TRAIL NORTH CA. 3 MILES TO KEEPOUT GULCH.

Occurrence number: 020  
 Site name: THORNGUIST GULCH  
 COUNTY: MEAGHER  
 Township & Range: 011N007E Section: 17 Subsection/additional sections: NE4,16NW4  
 Latitude: 464312 Longitude: 1105200 Elevation: 5600  
 USGS Quad: CHARCOAL GULCH  
 Location: CA. 14.6 MILES (12 AIR MILES) NORTH OF WHITE SULPHUR SPRINGS  
 ON US HWY 89, 0.4 MILES NORTH ON GRAVEL ROAD TO THORNGUIST  
 GULCH; ALSO IN NEXT GULCH (UNNAMED) TO THE SOUTH.

Occurrence number: 022  
 Site name: ROGERS PASS EAST  
 COUNTY: LEWIS & CLARK  
 Township & Range: 015N006W Section: 14 Subsection/additional sections: NW4,10SE4,10NW4, +  
 Latitude: 470340 Longitude: 1121950 Elevation: 6600  
 USGS Quad: ROGERS PASS  
 Location: TRSCOMM CONT.: 35W4SW4,23N2NE4. STATE HWY 200 NORTHEAST FROM  
 LINCOLN 10.5 MILES TO ROGERS PASS; ALONG CONTINENTAL DIVIDE  
 SOUTHEAST OF PASS FOR 0.75-4 MILES.

Occurrence number: 023  
 Site name: RED MOUNTAIN  
 COUNTY: LEWIS & CLARK  
 Township & Range: 016N007W Section: 12 Subsection/additional sections: NW4,11NE4,1NW4  
 Latitude: 470942 Longitude: 1122620 Elevation: 7100  
 USGS Quad: BLOWOUT MOUNTAIN  
 Location: RED MOUNTAIN, AND RIDGES SOUTH AND WEST OF SUMMIT, NORTH OF  
 ALICE CREEK BASIN, ABOUT 1.4-2.1 AIR MILES NNW OF LEWIS AND  
 CLARK PASS.

TABLE 1A. (cont.).

Occurrence number: #25

Site name: SOUP CREEK WEST

COUNTY: LEWIS & CLARK

Township & Range: 012N001W Section: 28 Subsection/additional sections: NW4NW4

Latitude: 464629 Longitude: 1114446 Elevation: 4700

USGS Quad: HOGBACK MOUNTAIN

Location: BIG BELT MOUNTAINS, SOUP CREEK DRAINAGE, CA. 2.0 AIR MILES  
NORTHEAST OF HELENA NF ROAD #224, CA. 3.5 AIR MILES NORTH OF  
YORK.

Occurrence number: #26

Site name: SOUP CREEK EAST

COUNTY: LEWIS & CLARK

Township & Range: 012N001W Section: 15 Subsection/additional sections: S2SW4, 22N2NW4

Latitude: 464729 Longitude: 1114326 Elevation: 5400

USGS Quad: HOGBACK MOUNTAIN

Location: BIG BELT MOUNTAINS, SOUP CREEK DRAINAGE, CA. 4 MILES NORTH-  
EAST OF HELENA NF ROAD #224, CA. 5 AIR MILES NNE OF YORK.

TABLE 1B. *Lesquerella klausii* locations on areas other than U.S. Forest Service lands, Lewis & Clark and Meagher Counties, Montana.

Occurrence number: #09  
 Site name: BURNT GULCH  
 COUNTY: LEWIS & CLARK  
 Township & Range: #13N#01W Section: 23 Subsection/additional sections: NE4SW4  
 Latitude: 4652#4 Longitude: 1114139 Elevation: 52#0  
 USGS Quad: HOGBACK MOUNTAIN  
 Location: BIG BELT MOUNTAINS, ALONG BEAVER CREEK RD. (HELENA N.F. RD.  
 #138) IN BURNT GULCH, FOURTH SWITCHBACK UP FROM BEAVER  
 CREEK, CA. 6 MILES NE OF NELSON.

Occurrence number: #19  
 Site name: BUTLER HILL  
 COUNTY: MEAGHER  
 Township & Range: #10N#07E Section: #5 Subsection/additional sections: NW4E4 & SW4NE4  
 Latitude: 463919 Longitude: 11#5223 Elevation: 55#0  
 USGS Quad: CHARCOAL GULCH  
 Location: 9.5 MILES (7.5 AIR MILES) NORTH OF WHITE SULPHUR SPRINGS ON  
 US HWY 89, ON WEST SIDE OF ROAD.

Occurrence number: #21  
 Site name: NEWLAN CREEK RESERVOIR  
 COUNTY: MEAGHER  
 Township & Range: #10N#06E Section: 12 Subsection/additional sections: NW4  
 Latitude: 463#4# Longitude: 11#5519 Elevation: 53#0  
 USGS Quad: COXCOMBE BUTTE  
 Location: 11.3 MILES NORTH OF WHITE SULPHUR SPRINGS ON US HWY 89, THEN  
 ABOUT 3 MILES SOUTHWEST ON NEWLAN CREEK ROAD TO RESERVOIR.  
 SITE IS ON NORTH SIDE OF ROAD.

Occurrence number: #24  
 Site name: STEBEN RANCH RIDGE  
 COUNTY: LEWIS & CLARK  
 Township & Range: #13N#04W Section: 12 Subsection/additional sections: NE4,1SW4  
 Latitude: 4654#8 Longitude: 112#255 Elevation: 62#0  
 USGS Quad: SHEEP CREEK  
 Location: NORTH OF HILGER VALLEY, ON RIDGELINE BETWEEN TOWHEAD GULCH  
 AND LEVINGS GULCH, CA. 2.5 AIR MILES NE OF 1-15.

Occurrence number: #27  
 Site name: MIDDLE FORK DEARBORN RIVER  
 COUNTY: LEWIS & CLARK  
 Township & Range: #16N#06W Section: #1 Subsection/additional sections: NW4,2NE4  
 Latitude: 471#17 Longitude: 1121#49 Elevation: 44#0  
 USGS Quad: JOHNSON MOUNTAIN  
 Location: MIDDLE FORK DEARBORN RIVER DRAINAGE, NW OF STATE HWY 2#0,  
 CA. #.2 MILES SOUTHWEST OF BRIDGE OVER RIVER, CA. 8 MILES  
 NORTHEAST OF ROGERS PASS.

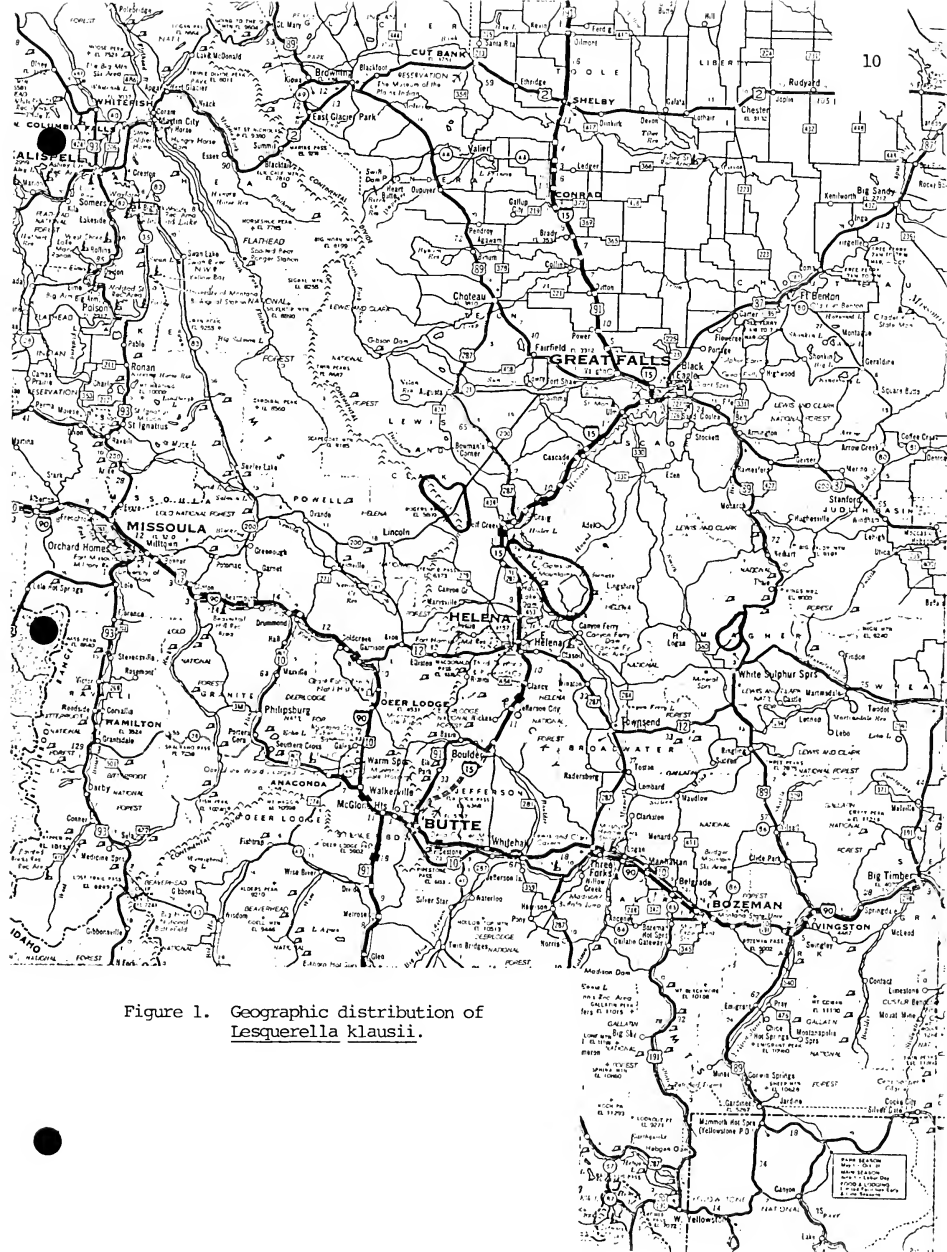


Figure 1. Geographic distribution of *Lesquerella klausii*.

Throughout this report, the three-digit occurrence numbers are indicated in parentheses after the site names; these correspond to the occurrence numbers provided in the tables and computer print-outs.

3. HISTORICAL SITES: None known.
4. UNVERIFIED/UNDOCUMENTED REPORTS: None.
5. AREAS SURVEYED BUT SPECIES NOT LOCATED: The following areas were surveyed for L. klausii because the habitat appeared suitable, but the species was not located within them. The actual areas surveyed are smaller than the portions of the sections indicated. Locations which are wholly or partially on U.S. Forest Service lands are indicated with an asterisk (\*).

BROADWATER COUNTY

USGS Hellgate Gulch Quadrangle:

- \*a. T10N, R1E, Section 3, NW $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$   
SW $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$   
center of NW $\frac{1}{4}$   
Section 4, NE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$

USGS Sulphur Bar Creek Quadrangle:

- \*b. T7N, R4E, Section 12, W $\frac{1}{2}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$
- \*c. " Section 13, E $\frac{1}{2}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$
- \*d. " Section 22, E $\frac{1}{2}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$   
W $\frac{1}{2}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$   
W $\frac{1}{2}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$   
E $\frac{1}{2}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$   
SW $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$
- \*e. " Section 23, S $\frac{1}{2}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$   
N $\frac{1}{2}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$
- \*f. " Section 27, SW $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$   
NW $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$   
NW $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$   
NE $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$
- \*g. " Section 28, E $\frac{1}{2}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$



LEWIS & CLARK COUNTYUSGS Canyon Ferry Quadrangle:

h. T10N, R1W, Section 1, NE $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$

USGS Hogback Mountain Quadrangle:

\*i. T12N, R1W, Section 25, SW $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$   
N $\frac{1}{2}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$

USGS Nelson Quadrangle:

\*j. T12N, R1W, Section 32, center of SW $\frac{1}{4}$

\*k. T12N, R2W, Section 11, NE $\frac{1}{4}$ SW $\frac{1}{4}$

\*l. " Section 12, NW $\frac{1}{4}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$   
E $\frac{1}{2}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$

\*m. " Section 23, SE $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$   
NE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$   
Section 24, NW $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$

\*n. T13N, R2W, Section 23, E $\frac{1}{2}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$   
SE $\frac{1}{4}$ SW $\frac{1}{4}$   
SW $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$   
Section 26, E $\frac{1}{2}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$   
NE $\frac{1}{4}$ NW $\frac{1}{4}$   
NW $\frac{1}{4}$ NE $\frac{1}{4}$   
N $\frac{1}{2}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$

USGS Upper Holter Lake Quadrangle:

\*o. T12N, R2W, Section 17, E $\frac{1}{2}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$   
W $\frac{1}{2}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$   
SE $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$   
SE $\frac{1}{4}$ NW $\frac{1}{4}$   
W $\frac{1}{2}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$

MEAGHER COUNTYUSGS Coxcombe Butte Quadrangle:

\*p. T11N, R6E, Section 10, E $\frac{1}{2}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$   
NE $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$   
SE $\frac{1}{4}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$   
SE $\frac{1}{4}$ SW $\frac{1}{4}$   
SW $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$   
W $\frac{1}{2}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$

\*q. T11N, R7E, Section 7, center of SE $\frac{1}{4}$

\*r. T11N, R7E, Section 8, N $\frac{1}{2}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$   
S $\frac{1}{2}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$

USGS Charcoal Gulch Quadrangle:

\*s. T11N, R7E, Section 8, SW $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$   
N $\frac{1}{2}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$

\*t. " Section 9, N $\frac{1}{2}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$   
W $\frac{1}{2}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$   
SE $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$

\*u. " Section 3, SW $\frac{1}{4}$ SW $\frac{1}{4}$   
Section 10, W $\frac{1}{2}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$

\*v. " Section 11, E $\frac{1}{2}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$   
S $\frac{1}{2}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$

\*w. " Section 13, NW $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$   
NE $\frac{1}{4}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$

\*x. " Section 16, N $\frac{1}{2}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$   
Section 17, E $\frac{1}{2}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$

\*y. " Section 20, E $\frac{1}{2}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$   
SW $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$   
N $\frac{1}{2}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$   
Section 21, NW $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$

E. HABITAT

1. ASSOCIATED VEGETATION: Lesquerella klausii generally occurs on sparsely vegetated slopes. The zonal vegetation in numerous locations is dominated by forests of Pinus ponderosa (Ponderosa pine) and/or Pseudotsuga menziesii (Douglas fir). The associated herbaceous vegetation is most often dominated by bunchgrasses, including Agropyron spicatum (Bluebunch wheatgrass) and Festuca idahoensis (Idaho fescue). At higher elevations (i.e., Red Mountain (023)), L. klausii has been found in association with Pinus flexilis (Limber pine), Abies lasiocarpa (Subalpine fir), and Festuca viridula (Green fescue). Other plant species observed with L. klausii include:

Achillea millefolium (Common yarrow)  
Alyssum alyssoides (Pale alyssum)  
Amelanchier alnifolia (Alderleaf serviceberry)  
Apocynum androsaemifolium (Spreading dogbane)  
Arctostaphylos uva-ursi (Kinnikinnick)  
Artemisia frigida (Fringed sagewort)  
Artemisia tridentata (Big sagebrush)  
Balsamorhiza sagittata (Arrowleaf balsamroot)

Berberis repens (Creeping oregongrape)  
Chrysopsis villosa (Hairy goldenaster)  
Chrysothamnus nauseosus (Common rabbit-brush)  
Chrysothamnus viscidiflorus (Green rabbit-brush)  
Cirsium undulatum (Wavyleaf thistle)  
Cymopterus terebinthinus (Turpentine cymopterus)  
Douglasia montana (Rocky Mountain douglasia)  
Erigeron compositus (Cut-leaved daisy)  
Eriogonum ovalifolium (Oval-leaved buckwheat)  
Eritrichium nanum (Pale alpine forget-Me-Not)  
Festuca scabrella (Rough fescue)  
Juniperus communis (Common juniper)  
Juniperus scopulorum (Rocky Mountain juniper)  
Koeleria macrantha (Prairie junegrass)  
Lesquerella alpina (Alpine bladderpod)  
Linum perenne (Blue flax)  
Lomatium dissectum (Fern-leaved lomatium)  
Mentzelia albicaulis (White-stemmed mentzelia)  
Oryzopsis hymenoides (Indian ricegrass)  
Penstemon albertinus (Alberta penstemon)  
Penstemon attenuatus (Sulphur penstemon)  
Penstemon eriantherus (Fuzzytongue penstemon)  
Phacelia hastata (Silverleaf phacelia)  
Phacelia linearis (Threadleaf phacelia)  
Phacelia sericea (Silky phacelia)  
Physaria didymocarpa (Common twinpod)  
Potentilla fruticosa (Shrubby cinquefoil)  
Potentilla glandulosa (Sticky cinquefoil)  
Purshia tridentata (Antelope-brush)  
Rhus trilobata (Skunk-bush sumac)  
Rosa sayi (Prickly rose)  
Senecio canus (Woolly groundsel)  
Townsendia parryi (Parry's townsendia)

The shale barren communities with which approximately half of the L. klausii sites are associated support unusual plant assemblages which are not commonly encountered in Montana. Additionally, several of the higher elevation sites (Telephone Gulch (ØØ5), Rogers Pass East (Ø22), Red Mountain (Ø23)) contain interesting examples of unusual windblown cushion plant communities.

2. TOPOGRAPHY: Populations of L. klausii are most often found on steep, south-facing slopes, with portions of some populations occurring on east, northwest, or west exposures, or partially in level areas. The slopes usually range from approximately 10 to 45%.

The sites range from 1220 m. (4000 ft.) to 2165 m. (7100 ft.) in elevation; this span is relatively wide for a species which has a small geographic

range.

3. SOIL RELATIONSHIPS: Lesquerella klausii is largely restricted to sparsely vegetated gravelly or rocky slopes, often in sites with poor soil development. The type of parent material does not distinguish the sites where it is found; populations are known from limestone, shale, argillite, and quartz-derived substrates. Soil texture, and the lack of dense competing vegetation, appear to be the most important factors in determining the distribution of L. klausii.

The following occurrences are wholly or partially associated with shale barrens and slopes:

Hunters Gulch (001)  
 Pike Creek (003)  
 Rogers Pass West (004)  
 Barking Dog (006)  
 Nelson (007)  
 Refrigerator Canyon (008)  
 Blacksmith Gulch (010)  
 Sheep Mountain Pass (014)  
 Bull Run Gulch (016)  
 Sweats Gulch (017)  
 Butler Hill (019)  
 Rogers Pass East (022)  
 Soup Creek West (025) and East (026)

Most or all of the following three occurrences have been found on limestone-derived soils:

Big Log Gulch-Hunters Gulch Ridge (013)  
 Moors Creek (015)  
 Keepout Gulch (018)

At a number of sites, portions of the populations are found on adjacent roadbanks and similarly disturbed sites. This response reflects the preference of L. klausii for open, rocky habitats which are relatively unstable. These sites include:

Alice Creek (002)  
 Pike Creek (003)  
 Barking Dog (006)  
 Nelson (007)  
 Refrigerator Canyon (008)  
 Burnt Gulch (009)  
 Prices Gulch (012)  
 Butler Hill (019)  
 Newlan Creek Reservoir (021)

4. REGIONAL CLIMATE: The climate of west-central Montana can generally be classified as cool, dry, and continental, with locally greater amounts of precipitation in the mountains. For the distributional area of L. klausii, the nearest climatological stations include Holter Dam (1063 m. (3487 ft.)) and White Sulphur Springs (1659 m. (5440 ft.), precipitation only). Data for the period 1951-1980 are provided by the U.S. Department of Commerce (1982). At Holter Dam, the mean annual precipitation was 30.53 cm. (12.02 in.); the mean annual temperature was 8.5°C (47.3°F), and the mean July maximum temperature was 29.3°C (84.7°F). At White Sulphur Springs, the mean annual precipitation was 39.88 cm. (15.7 in.).

#### F. POPULATION DEMOGRAPHY AND BIOLOGY

1. PHENOLOGY: Lesquerella klausii has been found in bloom from early May to early July, depending upon climatic conditions and elevation. Peak flowering at most sites is in late May and early June. A few flowering individuals have been found in September and October, during warm autumn periods, but this flowering most likely does not result in any substantial additional seed set. Fruiting extends primarily from mid-May to July.
2. POPULATION SIZE AND CONDITION: Populations of L. klausii range in size from fewer than 20 to 3000 or more individuals; these populations contain from one to nine subpopulations. The average population size is approximately 650. The total number of plants observed to date is approximately 17000-18000.

Details regarding population size and condition are summarized in Table 2, pp. 17-20.

3. REPRODUCTIVE BIOLOGY
  - a. TYPE OF REPRODUCTION: The flowers of L. klausii are chasmogamous (they have a conspicuous corolla, and open normally for pollination and fertilization). Self-incompatibility is widespread in the genus, though self-compatibility is also present in at least some species. Most populations of Lesquerella are in open habitats, with the plants aggregated together. Undoubtedly, cross-pollination is the norm for the genus as a whole (Rollins and Shaw, 1973). Fruit set in L. klausii during peak periods

TABLE 2. Population size and condition, Lesquerella klausii, Lewis & Clark and Meagher Counties, Montana.

Occurrence number: 001

Site name: HUNTERS GULCH

Acreage: 50

Population size and condition: 1000-2000 INDIVIDUALS; MANY SEEDLINGS PRESENT; SITE BURNED IN 1984, WHICH APPEARS TO HAVE INVIGORATED THE THREE SUB-POPULATIONS.

Occurrence number: 002

Site name: ALICE CREEK

Acreage: 40

Population size and condition: 101-1000 INDIVIDUALS; PORTIONS OF POPULATION OCCUR ALONG JEEP TRAIL TO LEWIS & CLARK PASS, BUT ROAD HAS BEEN CLOSED.

Occurrence number: 003

Site name: PIKE CREEK

Acreage: 50

Population size and condition: 1000-2000 INDIVIDUALS, SCATTERED OVER A LARGE AREA; SOME PORTIONS OF SITE ARE FAIRLY UNDISTURBED.

Occurrence number: 004

Site name: ROGERS PASS WEST

Acreage: 5

Population size and condition: CA. 500 PLANTS IN FOUR SUBPOPULATIONS; ONE SUBPOPULATION IS ON SLOPE JUST ABOVE HIGHWAY, OTHERS ARE FARTHER FROM ROAD.

Occurrence number: 005

Site name: TELEPHONE GULCH

Acreage: 22

Population size and condition: CA. 1000-2000 PLANTS, IN FLOWER AND FRUIT; MOST ABUNDANT ON MORE OPEN, GRAVELLY, GRAY TO REDDISH COLORED AREAS; GRAVELLY LOAM SOIL; VERY LITTLE OR NO EVIDENCE OF GRAZING IMPACT.

Occurrence number: 006

Site name: BARKING DOG

Acreage: 4

Population size and condition: CA. 200-300 PLANTS, IN FLOWER AND EARLY FRUIT; SITE IS BI-SECTED BY A ROAD, BUT PLANTS MOSTLY OCCUR IN NATIVE MONTANE SLOPE AREAS, WITH SOME HAVING SEEDED ONTO THE DISTURBED ROAD BANKS.

TABLE 2. (cont.).

Occurrence number: #07

Site name: NELSON

Acreage: 10

Population size and condition: CA. 150 PLANTS, 3 SUBPOPULATIONS (27 PLANTS ON ROADSIDE, CA. 120 ON UNDISTURBED SLOPES NORTH OF ROAD); SOME CHEATGRASS INVASION, AREA WAS PARTIALLY BURNED IN THE NORTH HILL FIRE (1984).

Occurrence number: #08

Site name: REFRIGERATOR CANYON

Acreage: 8

Population size and condition: CA. 200 PLANTS, IN FLOWER AND FRUIT; SOME PLANTS OCCUR ON ROADBANK, BUT OTHERWISE MOST OCCUR ON THE UNDISTURBED SLOPE.

Occurrence number: #09

Site name: BURNT GULCH

Acreage: 5

Population size and condition: CA. 150 PLANTS, IN FLOWER AND FRUIT; PLANTS OCCUR ON ROADBANK AND IN SMALL AREA OF UNDISTURBED VEGETATION ABOVE THE ROAD.

Occurrence number: #10

Site name: BLACKSMITH GULCH

Acreage: 5

Population size and condition: SMALL POPULATION, 20-25 PLANTS; VERY SPARSE POPULATION, IN UNDISTURBED HABITAT; IN FRUIT.

Occurrence number: #11

Site name: KELLY GULCH

Acreage: 5

Population size and condition: CA. 50-60 PLANTS, IN FRUIT; UNDISTURBED SITE, THOUGH ADJACENT TO SEVERAL RESIDENCES.

Occurrence number: #12

Site name: PRICES GULCH

Acreage: 2

Population size and condition: 2 SUBPOPULATIONS: 14 ON ROADSIDE, 4 IN ADJACENT FOREST; IN FRUIT.

Occurrence number: #13

Site name: 816 LOG GULCH-HUNTERS GULCH RIDGE

Acreage: 10

Population size and condition: SEVERAL HUNDRED PLANTS, IN TWO SUBPOPULATIONS; AREA BURNED IN 1984 FIRE.

TABLE 2. (cont.).

- Occurrence number: 014  
 Site name: SHEEP MOUNTAIN PASS  
 Acreage: 60  
 Population size and condition: EST. 2000-3000+ PLANTS, 3 SUBPOPULATIONS; HABITAT IS UNDISTURBED, EXCEPT FOR NEARBY HIKING TRAIL; FLOWERS AND EARLY FRUIT.
- Occurrence number: 015  
 Site name: MOORS CREEK  
 Acreage: 2  
 Population size and condition: EST. 400-500 PLANTS IN 2 SUBPOPULATIONS; FLOWERS AND EARLY FRUIT; HIKING TRAIL TRAVERSES POPULATIONS.
- Occurrence number: 016  
 Site name: BULL RUN GULCH  
 Acreage: 15  
 Population size and condition: EST. 750-1000+ PLANTS, 3 SUBPOPULATIONS; FLOWERS AND FRUIT; HABITAT LARGELY UNDISTURBED, BUT 2 MINE CLAIM POSTS ON SITE.
- Occurrence number: 017  
 Site name: SWEATS GULCH  
 Acreage: 15  
 Population size and condition: 3 SUBPOPULATIONS: 1)500-600+, 2)15, 3)30-40; FLOWERS AND FRUIT; HABITAT MOSTLY UNDISTURBED; ORV TRAIL ALONG RIDGE.
- Occurrence number: 018  
 Site name: KEEPOUT GULCH  
 Acreage: 2  
 Population size and condition: EST. 200-300+ PLANTS; UNDISTURBED HABITAT; FLOWERS AND FRUIT.
- Occurrence number: 019  
 Site name: BUTLER HILL  
 Acreage: 10  
 Population size and condition: EST. 300-400 PLANTS; FLOWERS AND FRUIT; HEAVY GRAZING IN ADJACENT AREAS, AND IN SOME PORTIONS OF SITE.
- Occurrence number: 020  
 Site name: THORNGUIST GULCH  
 Acreage: 20  
 Population size and condition: 3 SUBPOPULATIONS: 1)100+, 2)SOUTH GULCH 300-400, 3)THORNGUIST GULCH 1500-2000; LATE FLOWER AND FRUIT; LIGHT GRAZING IN SOME PORTIONS OF HABITAT.



TABLE 2. (cont.).

Occurrence number: 021  
 Site name: NEULAN CREEK RESERVOIR  
 Acreage: 1  
 Population size and condition: EST. 8 PLANTS ON ROADBANK, 11 COUNTED ON NATIVE SLOPE ABOVE.

Occurrence number: 022  
 Site name: ROGERS PASS EAST  
 Acreage: 100  
 Population size and condition: 2000 OR MORE PLANTS, NINE SUBPOPULATIONS, SCATTERED ALONG CONTINENTAL DIVIDE; DIFFICULT TO ESTIMATE POPULATION SIZE DUE TO EXPANSE OF POPULATION; HABITAT UNDISTURBED; FLOWERS AND EARLY FRUIT.

Occurrence number: 023  
 Site name: RED MOUNTAIN  
 Acreage: 30  
 Population size and condition: ABOUT 600-800+ PLANTS, IN 4 SUBPOPULATIONS; LIVESTOCK GRAZING IMPACTS IN SOME PORTIONS OF SITE; FLOWERS AND EARLY FRUIT.

Occurrence number: 024  
 Site name: SIEBEN RANCH RIDGE  
 Acreage: 2  
 Population size and condition: EST. 20-30 PLANTS, IN TWO SMALL SUBPOPULATIONS; PLANTS IN VEGETATIVE CONDITION; SOME DRV AND GRAZING USE IN AREA.

Occurrence number: 025  
 Site name: SOUP CREEK WEST  
 Acreage: 5  
 Population size and condition: ONE POPULATION, CA. 25-30 PLANTS; HABITAT LARGELY UNDISTURBED; MAY BE MORE PLANTS ON SLOPE TO THE SOUTHWEST.

Occurrence number: 026  
 Site name: SOUP CREEK EAST  
 Acreage: 5  
 Population size and condition: EST. 300-400+ PLANTS (249 INDIVIDUALS COUNTED); HABITAT UNDISTURBED; POST-FRUITING.

Occurrence number: 027  
 Site name: MIDDLE FORK DEARBORN RIVER  
 Acreage: 20  
 Population size and condition: PLANTS SCATTERED, CA. 101-1000 INDIVIDUALS (LESICA, 1987); VERY FEW PLANTS (< 10) OBSERVED ON 1987-06-03 (SHELLY); SOME EVIDENCE OF LIGHT LIVESTOCK GRAZING.

appeared to be very vigorous. During surveys in 1986 and 1987, no evidence of any vegetative reproduction was observed.

- b. **POLLINATION BIOLOGY:** During field surveys in 1986 and 1987, insects were occasionally observed visiting the flowers of L. klausii, including one which appeared to be a member of the genus Bombus (bumblebee). Rollins and Shaw (1973) report that "(i)n the field, insects, mostly bees and flies, were repeatedly observed visiting the flowers" of Lesquerella. No other details of the pollination biology are known at this time; it is unknown whether there are any specialized plant-pollinator relationships involving L. klausii.
- c. **SEED DISPERSAL AND BIOLOGY:** Each fruit of L. klausii is capable of producing four seeds; the seeds are wingless, and about 2 mm. (0.08 in.) in diameter (Rollins, 1984). Thus, there does not appear to be any mechanism that might aid in long-distance dispersal. It is likely that most seeds fall near the parent plants.

At the Hunters Gulch (001) site, numerous seedlings were observed in 1985 and 1986. This area was burned during the 1984 North Hills fire, and it appears that this may have invigorated the population; seed germination may have been enhanced owing to a reduction in competing vegetation, and/or the heat of the fire. No detailed information is available, however, on this or other aspects of the seed biology of L. klausii.

## G. POPULATION ECOLOGY

### 1. BIOLOGICAL INTERACTIONS

- a. **COMPETITION:** As previously discussed (I.E.1., p. 13), L. klausii occurs most frequently and abundantly on open, sparsely vegetated slopes, often in azonal soils. In addition, at nine of the 27 known occurrences, the species has partially colonized adjacent disturbed areas, usually consisting of steep, unstable roadbanks. These observations suggest that L. klausii does not compete well in denser zonal vegetation, i.e., bunchgrass communities

and closed forest stands. This ability to colonize open, disturbed or unstable sites has been observed in populations of other rare plant species in Montana, including Grindelia howellii (Shelly, 1986) and Penstemon lemhiensis (Ramstetter, 1983; Shelly, 1987). Although the density of L. klausii is often greater in the disturbed areas at many of the nine sites occurring along roads, the majority of the plants are still found in the adjacent native habitat areas.

- b. **SUCCESSIONAL RELATIONSHIPS:** As a species adapted to open, gravelly or rocky sites, L. klausii appears to prefer earlier successional stages. One indication of this preference is seen at Hunters Gulch (001), where numerous seedlings appeared after the area burned in 1984 (see I.F.3.c., p. 21). The reversion to an earlier successional stage via such burning may benefit the species through a reduction in competing vegetation. Detailed ecological studies would be needed, however, to determine the exact successional relationship of L. klausii.

#### H. LAND OWNERSHIP

1. The land ownership for the 27 currently known occurrences is given below. The exact locations are provided in Table 1, pp. 4-9.
- a. U.S. Forest Service (Helena National Forest):
- Hunters Gulch (001)
  - Alice Creek (002)
  - Pike Creek (003)
  - Rogers Pass West (004)
  - Telephone Gulch (005)
  - Barking Dog (006)
  - Refrigerator Canyon (008)
  - Blacksmith Gulch (010)
  - Kelly Gulch (011)
  - Big Log Gulch-Hunters Gulch Ridge (013)
  - Sheep Mountain Pass (014)
  - Moors Creek (015)
  - Bull Run Gulch (016)
  - Sweats Gulch (017)
  - Keepout Gulch (018)

Rogers Pass East (022)

- b. U.S. Forest Service (Lewis & Clark National Forest):

Thornquist Gulch (020)

- c. U.S. Forest Service (Helena and Lewis & Clark National Forests):

Red Mountain (023)

- d. U.S. Forest Service (Helena National Forest) and private land:

Nelson (007)

Prices Gulch (012) - largely on USFS lands

Soup Creek West (025) - largely on USFS lands

Soup Creek East (026) - largely on USFS lands

- e. U.S. Bureau of Land Management, State of Montana, private land, or other:

Burnt Gulch (009)

Butler Hill (019)

Newlan Creek Reservoir (021)

Sieben Ranch Ridge (024)

Middle Fork Dearborn River (027)

## II. ASSESSMENT AND MANAGEMENT RECOMMENDATIONS

- A. THREATS TO CURRENTLY KNOWN POPULATIONS: The potential threats to certain populations of L. klausii consist of i.) mining and oil/gas exploration activities, ii.) road maintenance/construction, and iii.) grazing. The sites which may be impacted by these activities are reviewed below:

1. MINING AND OIL/GAS EXPLORATION ACTIVITIES: Several populations in the Big Belt Mountains may potentially be impacted by future mining activities. In particular, gold mining has recently increased in the vicinity of York. Two mine claim posts were observed on the Bull Run Gulch (016) site. The Sweats Gulch (017) site is similar to the Bull Run Gulch site, although no mine claim posts were seen. Other sites on U.S. Forest Service lands which are currently unprotected, and which could possibly be impacted by future mining activities, include:

Pike Creek (003)  
 Barking Dog (006)  
 Refrigerator Canyon (008)  
 Blacksmith Gulch (010)  
 Kelly Gulch (011)  
 Prices Gulch (012)  
 Soup Creek West (025)  
 Soup Creek East (026)

Oil and gas exploration and extraction are potential impacts occurring along the Rocky Mountain Front in Lewis & Clark County and northward. The following populations, located in the southern Scapegoat region, are within areas possibly subject to these activities:

Alice Creek (002)  
 Rogers Pass West (004)  
 Telephone Gulch (005)  
 Rogers Pass East (022)  
 Red Mountain (023)

2. ROAD MAINTENANCE/CONSTRUCTION: The following populations occur adjacent to roads, and in some cases plants have colonized the disturbed roadbanks from nearby native habitat. These sites could be impacted by further road maintenance or construction in the future.

Alice Creek (002)  
 Pike Creek (003)  
 Rogers Pass West (004)  
 Barking Dog (006)  
 Nelson (007) - one subpopulation  
 Refrigerator Canyon (008)  
 Burnt Gulch (009)  
 Prices Gulch (012) - predominantly on roadside  
 Butler Hill (019)  
 Newlan Creek Reservoir (021)

3. GRAZING: In general, L. klausii is not highly vulnerable to livestock grazing, owing to its adaptation to steep, unstable, sparsely vegetated slopes where grazing use is low. At the following three sites, evidence of livestock grazing was found:

Alice Creek (002)  
 Butler Hill (019)  
 Red Mountain (023)

While the moderate use that these areas have received did not appear to have seriously impacted the populations, it is possible that heavy grazing

in surrounding habitats could lead to a decline in their size. More detailed studies would be needed to fully assess the effects of such grazing on L. klausii.

- B. STABILITY OF CURRENTLY KNOWN POPULATIONS: Aside from the potential threats outlined above, most populations of L. klausii appear to be currently stable. Owing to their smaller size, and/or potential impacts from road maintenance, the following seven populations may have lower long-term viability:

Burnt Gulch (009)  
 Blacksmith Gulch (010)  
 Kelly Gulch (011)  
 Prices Gulch (012)  
 Newlan Creek Reservoir (021)  
 Sieben Ranch Ridge (024)  
 Soup Creek West (025)

The remaining populations are large, or are not immediately threatened, and their long-term viability is thus reasonably assured. Of particular importance in maintaining the species are the six populations which occur either within the Gates of the Mountains Wilderness Area (\*), or wholly or partially in the vehicle closure area along its southern boundary:

Hunters Gulch (001)  
 Nelson (007)  
 \*Big Log Gulch-Hunters Gulch Ridge (013)  
 \*Sheep Mountain Pass (014)  
 Moors Creek (015)  
 \*Keepout Gulch (018)

- C. MANAGEMENT PRACTICES AND RESPONSE: As previously discussed, L. klausii has a tolerance to disturbance, as evidenced by its ecological preference for more open habitats (steep shale barrens and rocky slopes), and its ability to colonize altered sites such as open roadbanks. Surface alteration of small areas adjacent to the larger populations thus may not have an adverse effect on the long-term viability of such sites. However, large-scale habitat alteration, i.e., from mining operations, could potentially result in the extirpation of populations. Other kinds of land use, including livestock grazing, do not seem to have had a serious impact on populations of the species.
- D. RECOMMENDATIONS FOR MAINTAINING VIABLE POPULATIONS: The following recommendations are made to insure the long-term persistence of viable populations of L. klausii on U.S. Forest Service lands in Montana:

1. Continued protection of natural habitats supporting large populations in and near the Gates of the Mountains wilderness area. The populations discussed in Section II.B., p. 25, are currently protected by wilderness designation, or inclusion in the adjacent vehicle closure area. Any management plans regarding recreational development in the area (i.e., hiking and pack trails) should be designed so as to minimize impacts on these sites. Maintenance of these sites in natural condition will enhance the long-term persistence of the populations.
2. Notification of road maintenance crews of locations of populations occurring wholly or partially along roadsides. Maps detailing the locations discussed in Section II.A.2., p. 24, should be provided to such crews, to aid in reducing or eliminating unnecessary impacts on, or loss of, these sites.
3. Analysis of potential impacts of mining and oil/gas exploration and extraction. The populations discussed in Section II.A.1., pp. 23-24, should be considered when mining and oil/gas activities are planned in their vicinity. Major impacts should be mitigated to allow for the continued persistence of the species in those areas.

#### E. RECOMMENDATIONS FOR FURTHER ASSESSMENT

1. Further surveys in potential habitats in western and central Montana. Areas which potentially support additional populations of L. klausii include:
  - a. Southern Scapegoat region, north and west of the Alice Mountains, and extending into the Scapegoat Wilderness Area.
  - b. Beartooth Game Management Area (especially Shellrock Ridge), and Beartooth Mountain area to the west.
  - c. Gates of the Mountains Wilderness Area, including Moors Mountain (south side), Candle Mountain, and Cap Mountain/Left Fork Big Log Gulch.
  - d. Southeastern Little Belt Mountains.

- F. SUMMARY: Lesquerella klausii is endemic to Montana, and is currently known from Lewis & Clark and Meagher counties. It has been proposed for inclusion on the Watch List of rare plant species in Region 1 of the U.S. Forest Service. There are 27 currently known sites. Status review studies indicate that the species is moderately tolerant of habitat disturbance. Three populations are protected within the Gates of the Mountains Wilderness Area, and three others are within the vehicle closure area along the southern boundary. Thus, the species is not imminently threatened with extinction. Future land use activities in the vicinity of other known populations should be planned with consideration for maintaining them, to help insure that listing of Lesquerella klausii on the Region 1 Sensitive Plant List does not become necessary.



## III. LITERATURE CITED

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IV. ELEMENT OCCURRENCE PRINT-OUTS AND MAPS (PP. 30-75)

## ELEMENT OCCURRENCE RECORD

EOCODE: PDBRAIN1Z0.001  
 NAME: LESQUERELLA KLAUSII  
 COMNAME: KLAUS' BLADDERPOD  
 MARGNUM: 1 TENTEN: 5,4 IDENT: Y EORANK: A  
 EORANKCOMM: LARGE POPULATION, RELATIVELY UNDISTURBED AREA.  
 SURVEYDATE: 1985-07-01 LASTOBS: 1987-06-02 FIRSTOBS: 1978 GRANK: G3  
 SRANK: S3 STATE: MT COUNTYNAME: MTLWI  
 QUADCODE: 4611177  
 QUADNAME: NELSON PRECISION: SC  
 LAT: 464947 LONG: 1114834 S: 464930 N: 464956 E: 1114828 W: 111497  
 TOWNRANGE: 012N002W SECTION: 01 MERIDIAN: PR  
 TRSCOMM: NW4;2,E2 PHYSPROV: NR WATERSHED: 10030101  
 DIRECTIONS: HUNTERS GULCH; FROM YORK, TAKE RD. NORTH TO NELSON; AT  
 NELSON, GO WEST 1/4 MI. TO HUNTERS GULCH; SITE IS CA. 3/4-  
 1.0 MI. UP GULCH.  
 GENDESC: ON SLOPES ABOVE GULCH, IN SPARSE GRASSLAND VEGETATION WITH  
 SCATTERED PINUS PONDEROSA ON SOME SLOPES; SOILS ARE GRAVELLY  
 AND SHALE-DERIVED; AGROPHYRON SPICATUM/CYTE/CHVI/MEAL.  
 ELEV: 4280 SIZE: 50  
 EODATA: 1000-2000 INDIVIDUALS; MANY SEEDLINGS PRESENT; SITE BURNED  
 IN 1984, WHICH APPEARS TO HAVE INVIGORATED THE THREE SUB-  
 POPULATIONS.  
 COMMENTS: VOUCHERS-LESICA, P. (3468, 3470), 1985, UM (102147, 102129);  
 SHELLY, J.S. (1067) AND G.V. KING, 1986, UM.  
 MACODE1: FFSNFHELE1MTUS CONTAINED1: Y MACODE2: CONTAINED2:  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPRO  
 MOREMGMT: SITECODE:  
 SITENAME: HUNTERS GULCH  
 OWNER: HELENA NATIONAL FOREST  
 OWNERCOMM:  
 PROTCOMM: SITE IS WITHIN VEHICLE CLOSURE AREA, NEAR WILDERNESS BDY.  
 MGMTCOMM:  
 MONITOR: MONITORNUM: -  
 BESTSOURCE: SHELLY, J.S. MT NATURAL HERITAGE PROGRAM, STATE LIBRARY,  
 1515 E. 6th AVE., HELENA, MT 59620.  
 SOURCECODE: PNDSE01MTUS S85LESUMMTUS A84ROL01MTUS PNDLES01MTUS U85  
 LES02MTUS S78LESUMMTUS S86SHEUMMTUS  
 DATASENS: N BOUNDARIES: Y PHOTOS: Y OWNERINFO:  
 TRANSCRIBR: 86-01-31 JSS CDREV: Y MAPPER: 86-01-31 JSS OC: Y  
 UPDATE: 88-02-09 JSS

## ELEMENT OCCURRENCE RECORD

EOCODE: PDBRAIN1Z0.002  
 NAME: LESQUERELLA KLAUSII  
 COMNAME: KLAUS' BLADDERPOD  
 MARGNUM: 1 TENTEN: 5,9 IDENT: Y EORANK: C  
 EORANKCOMM: MODERATE-SIZED POPULATION, HABITAT DISTURBED BY GRAZING.  
 SURVEYDATE: 1985-06-30 LASTOBS: 1987-06-11 FIRSTOBS: 1977 GRANK: 63  
 SRANK: S3 STATE: MT COUNTYNAME: MLEWI  
 QUADCODE: 4711224  
 QUADNAME: BLOWOUT MOUNTAIN PRECISION: SC  
 LAT: 470836 LONG: 1122624 S: 470829 N: 470847 E: 1122604 W: 112264  
 TOWNRANGE: 016N007W SECTION: 13 MERIDIAN: PR  
 TRSCOMM: NW4,14NE4 PHYSPROV: NR WATERSHED: 17010203  
 DIRECTIONS: ALICE CREEK BASIN, CA. 0.5 AIR MI. WEST OF LEWIS AND CLARK  
 PASS, CA. 10 MI. NORTH OF ST. HWY. 200 ON HELENA N.F. RD.  
 #293; "ROADCUT ON E. SLOPE ABOVE ROAD TO PASS" (1977).  
 GENDESC: GRAVELLY SOIL IN SPARSE VEGETATION ON S-FACING, FAIRLY STEEP  
 SLOPES; VEGETATION DOMINATED BY AGROPYRON SPICATUM & FESTUCA  
 IDAHOENSIS, W/ DOUGLASIA MONTANA, CHRYSOPSIS VILLOSA.  
 ELEV: 6000 SIZE: 40  
 EODATA: 101-1000 INDIVIDUALS; PORTIONS OF POPULATION OCCUR ALONG  
 JEEP TRAIL TO LEWIS & CLARK PASS, BUT ROAD HAS BEEN CLOSED.

COMMENTS: RECENTLY DESCRIBED MONTANA ENDEMIC.

MACODE1: FFSNFHELE1MTUS CONTAINED1: Y MACODE2: CONTAINED2:  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPRO

MOREMGMT: SITECODE:  
 SITENAME: ALICE CREEK  
 OWNER: HELENA NATIONAL FOREST  
 OWNERCOMM:  
 PROTCOMM:  
 MGMTCOMM:  
 MONITOR: MONITORNUM: -  
 BESTSOURCE: LESICA, P. DEPT. OF BOTANY, UNIV. OF MONTANA, MISSOULA, MT;  
 (3463), 1985, SPECIMEN #102145 UM.  
 SOURCECODE: PNDLES01MTUS S85LESUMMTUS A84ROL01MTUS PNDSE01MTUS U85  
 LES02MTUS S77LACUMMUTS  
 DATASENS: N BOUNDARIES: Y PHOTOS: N OWNERINFO:  
 TRANSCRIBR: 87-02-11 JSS CDREV: Y MAPPER: 86-01-31 JSS QC: Y  
 UPDATE: 88-02-09 JSS

## ELEMENT OCCURRENCE RECORD

EOCODE: PDBRAIN120.003  
 NAME: LESQUERELLA KLAUSII  
 COMNAME: KLAUS' BLADDERPOD  
 MARGNUM: 1 TENTEN: 7,2 IDENT: Y EORANK: B  
 EORANKCOMM: LARGE POPULATION, SOME PORTIONS RELATIVELY UNDISTURBED.  
 SURVEYDATE: 1985-07-01 LASTOBS: 1986-06-01 FIRSTOBS: 1985 GRANK: 63  
 SRANK: S3 STATE: MT COUNTYNAME: MTLWI  
 QUADCODE: 4611176  
 QUADNAME: HOGBACK MOUNTAIN PRECISION: SC  
 LAT: 465134 LONG: 1113940 S: 465106 N: 465145 E: 1113907 W: 111400  
 TOWNRANGE: 013N001W SECTION: 25 MERIDIAN: PR  
 TRSCOMM: N2;T13NR1E:1952,30N2 PHYSPROV: NR WATERSHED: 10030101  
 DIRECTIONS: BIG BELT MOUNTAINS, PIKE CREEK; EAST OF NELSON ON BEAVER  
 CREEK RD., NEAR HEAD OF DRAINAGE, CA. 1-2 AIR MILES WEST OF  
 LEWIS & CLARK - MEAGHER COUNTY LINE.  
 GENDESC: MODERATE TO STEEP SLOPES, IN GRAVELLY SHALE-DERIVED SOIL;  
 WITH SCATTERED PSEUDOTSUGA MENZIESII, AGROPYRON SPICATUM,  
 CYMPTERUS, PENSTEMON, ERIOGONUM.  
 ELEV: 5800 SIZE: 50  
 EODATA: 1000-2000 INDIVIDUALS, SCATTERED OVER A LARGE AREA; SOME  
 PORTIONS OF SITE ARE FAIRLY UNDISTURBED.

COMMENTS: VOUCHER-LESICA, P. (3475), 1985, UM (102146).

MACODE1: FFSNFHELE1MTUS CONTAINED1: Y MACODE2: CONTAINED2:  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPRO1  
 MOREMGMT: SITECODE:  
 SITENAME: PIKE CREEK  
 OWNER: HELENA NATIONAL FOREST  
 OWNERCOMM:  
 PROTCOMM:  
 MGMTCOMM:  
 MONITOR: MONITORNUM: -  
 BESTSOURCE: SHELLY, J.S. MT NATURAL HERITAGE PROGRAM, STATE LIBRARY,  
 1515 E. 6th AVE., HELENA, MT 59620.  
 SOURCECODE: PDSHE01MTUS S85LESUMMTUS A84ROL01MTUS U85LES02MTUS PND  
 LES01MTUS  
 DATASENS: N BOUNDARIES: Y PHOTOS: Y OWNERINFO:  
 TRANSCRIBR: 86-02-03 JSS CDREV: Y MAPPER: 86-02-03 JSS QC: Y  
 UPDATE: 88-02-09 JSS

## ELEMENT OCCURRENCE RECORD

EOCODE: PDBRAIN120.004  
 NAME: LESQUERELLA KLAUSII  
 COMNAME: KLAUS' BLADDERPOD  
 MARGNUM: 1 TENTEN: 1,3 IDENT: Y EORANK: B  
 EORANKCOMM: MODERATE-SIZED POPULATIONS, ADJACENT TO HIGHWAY.  
 SURVEYDATE: 1985-06-29 LASTOBS: 1987-06-03 FIRSTOBS: 1982 GRANK: G3  
 SRANK: S3 STATE: MT COUNTYNAME: MTLWI  
 QUADCODE: 4711213 4711214  
 QUADNAME: ROGERS PASS, CADOTTE CREEK PRECISION: SC  
 LAT: 470443 LONG: 1122225 S: 470437 N: 470523 E: 1122212 W: 11222  
 TOWNRANGE: 015N006W SECTION: 04 MERIDIAN: PR  
 TRSCOMM: W2,5NE4,9NW4 PHYSPROV: NR WATERSHED: 10030102  
 DIRECTIONS: NEAR ST. HWY. 200 AT ROGERS PASS, ON CONTINENTAL DIVIDE;  
 ABOVE HWY. ON WEST SIDE, AND ON SURROUNDING RIDGES.

GENDESC: GRAVELLY, COARSE-TEXTURED SOILS, ON UPPER SLOPES AND NEAR  
 ROCK OUTCROPS; WITH AGROPYRON SPICATUM, POTENTILLA  
 GLANDULOSA, DOUGLASIA MONTANA, DRABA SPP., PSME.

ELEV: 5920 SIZE: 5  
 EODATA: CA. 500 PLANTS IN FOUR SUBPOPULATIONS; ONE SUBPOPULATION IS  
 ON SLOPE JUST ABOVE HIGHWAY, OTHERS ARE FARTHER FROM ROAD.

COMMENTS: TYPE LOCALITY, RECENTLY DESCRIBED MONTANA ENDEMIC; ALSO IN  
 WATERSHED 17010203.

MACODE1: FFSNFHELE1MTUS CONTAINED1: Y MACODE2: CONTAINED2:  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPRO

MOREMGMT: SITECODE:  
 SITENAME: ROGERS PASS WEST  
 OWNER: HELENA NATIONAL FOREST  
 OWNERCOMM:  
 PROTCOMM:  
 MGMTCOMM:  
 MONITOR: MONITORNUM: -

BESTSOURCE: LESICA, P. DEPT. OF BOTANY, UNIV. OF MONTANA, MISSOULA, MT;  
 (3475), 1985, SPECIMEN #102142 UM.

SOURCECODE: PNDLES01MTUS PNDLAC01MTUS S85LESUMMTUS AB4ROL01MTUS U85  
 LES02MTUS SB4LACUMMTUS PND5HE01MTUS

DATASENS: N BOUNDARIES: Y PHOTOS: N OWNERINFO:  
 TRANSCRIBR: 86-02-03 JSS CDREV: Y MAPPER: 86-02-03 JSS QC: Y  
 UPDATE: 88-02-09 JSS

## ELEMENT OCCURRENCE RECORD

EOCODE: PDBRA1N1Z0.005  
 NAME: LESQUERELLA KLAUSII  
 COMMONNAME: KLAUS' BLADDERPOD  
 MARGNUM: 4 TENTEN: 6,10 IDENT: Y EORANK: A  
 EORANKCOMM: LARGE, VIGOROUS POPULATION; UNDISTURBED MONTANE SLOPE.  
 SURVEYDATE: 1986-06-13 LASTOBS: 1986-06-13 FIRSOTBS: 1986 GRANK: 63  
 SRANK: 53 STATE: MT COUNTYNAME: MTLLEWI  
 QUADCODE: 4711224  
 QUADNAME: BLOWOUT MOUNTAIN PRECISION: SC  
 LAT: 470758 LONG: 1122554 S: 470751 N: 470802 E: 1122543 W: 11226:  
 TOWNRANGE: 016N007W SECTION: 24 MERIDIAN: PR  
 TRSCOMM: N2 PHYSPROV: NR WATERSHED: 17010203  
 DIRECTIONS: CA. 10 MILES NORTH OF ST. HWY. 200 ON ALICE CREEK ROAD  
 (HELENA NF #293); RIDGE ON N. SIDE OF HEAD OF TELEPHONE  
 GULCH, NW FLANK OF GREEN MOUNTAIN.  
 GENDESC: SOUTH TO SW-FACING MONTANE SLOPE, WITH SOME PLANTS ON NW-  
 FACING SLOPE; WITH FESTUCA VIRIDULA, F. IDAHOENSIS,  
 TOWNSENDIA PARRYI, ERIGERON COMPOSITUS, PHACELIA SERICEA.  
 ELEV: 6840 SIZE: 22  
 EODATA: CA. 1000-2000 PLANTS, IN FLOWER AND FRUIT; MOST ABUNDANT ON  
 MORE OPEN, GRAVELLY, GRAY TO REDDISH COLORED AREAS; GRAVELLY  
 LOAM SOIL; VERY LITTLE OR NO EVIDENCE OF GRAZING IMPACT.  
 COMMENTS: VOUCHER-SHELLY, J.S. (1102) AND G.V. KING, 1986, MONTU.  
 MACODE1: FFSNFHELE1MTUS CONTAINED1: Y MACODE2: CONTAINED2:  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPRO:  
 MOREMGMT: SITECODE:  
 SITENAME: TELEPHONE GULCH  
 OWNER: HELENA NATIONAL FOREST  
 OWNERCOMM:  
 PROTCOMM:  
 MGMTCOMM:  
 MONITOR: MONITORNUM:  
 BESTSOURCE: SHELLY, J.S. 1986. FIELD SURVEYS IN LEWIS & CLARK AND  
 BROADWATER COUNTIES OF 10-13 JUNE.  
 SOURCECODE: F86SHE02MTUS PND8SHE01MTUS S86SHEUMTUS A84ROL01MTUS  
 DATASENS: N BOUNDARIES: Y PHOTOS: Y OWNERINFO:  
 TRANSCRIBR: 86-06-17 JSS CDREV: Y MAPPER: 86-06-18 JSS QC: Y  
 UPDATE: 88-02-09 JSS

## ELEMENT OCCURRENCE RECORD

EOCODE: PDBRAIN1Z0.006  
 NAME: LESQUERELLA KLAUSII  
 COMNAME: KLAUS' BLADDERPOD  
 MARGNUM: 2 TENTEN: 10,6 IDENT: Y EORANK: BC  
 EORANKCOMM: MEDIUM-SIZED POPULATION; UNDISTURBED SLOPES & ROADBANKS.  
 SURVEYDATE: 1986-06-10 LASTOBS: 1986-06-10 FIRSOBS: 1986 GRANK: G3  
 SRANK: S3 STATE: MT COUNTYNAME: MITLEWI  
 QUADCODE: 4611176  
 QUADNAME: HOGBACK MOUNTAIN PRECISION: SC  
 LAT: 464824 LONG: 1113740 S: 0 N: 0 E: 0 W:  
 TOWNRANGE: 012N001E SECTION: 17 MERIDIAN: PR  
 TRSCOMM: N2NE4 PHYSPROV: NR WATERSHED: 10030101  
 DIRECTIONS: BIG BELT MOUNTAINS, HELENA N.F. ROAD 138 (BEAVER CREEK ROAD)  
 CA. 3 MILES ESE OF INDIAN FLATS GUARD STATION; 0.25 AIR  
 MILES SE OF BARKING DOG, SLOPE NORTH OF INDIAN CREEK.  
 GENDESC: SOUTH-FACING SLOPE AND ROADBANKS, IN GRAVELLY LOAM SOIL WITH  
 SMALL SHALE FLAKES; WITH PSEUDOTSUGA MENZIESII, AGROPYRON  
 SPICATUM, FESTUCA IDAHOENSIS, PHACELIA HASTATA.  
 ELEV: 5240 SIZE: 4  
 EODATA: CA. 200-300 PLANTS, IN FLOWER AND EARLY FRUIT; SITE IS BI-  
 SECTED BY A ROAD, BUT PLANTS MOSTLY OCCUR IN NATIVE MONTANE  
 SLOPE AREAS, WITH SOME HAVING SEEDED ONTO THE DISTURBED ROAD  
 BANKS.  
 COMMENTS: VOUCHER-SHELLY, J.S. (1071) AND G.V. KING, 1986-06-01,  
 MONTU.  
 MACODE1: FFSNFHELE1MTUS CONTAINED1: Y MACODE2: CONTAINED2:  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPRO\*  
 MOREMGMT: SITECODE:  
 SITENAME: BARKING DOG  
 OWNER: HELENA NATIONAL FOREST  
 OWNERCOMM:  
 PROTCOMM:  
 MGMTCOMM:  
 MONITOR: MONITORNUM:  
 BESTSOURCE: SHELLY, J.S. 1986. FIELD SURVEYS IN LEWIS & CLARK AND  
 BROADWATER COUNTIES OF 10-13 JUNE.  
 SOURCECODE: FB6SHE02MTUS PND6SHE01MTUS SB6SHEUMTUS AB4ROL01MTUS  
 DATASENS: N BOUNDARIES: Y PHOTOS: N OWNERINFO:  
 TRANSCRIBR: 86-06-17 JSS CDREV: Y MAPPER: 86-06-19 JSS GC: Y  
 UPDATE: 88-02-09 JSS



## ELEMENT OCCURRENCE RECORD

EOCODE: PDBRAINIZ0.007  
 NAME: LESQUERELLA KLAUSII  
 COMNAME: KLAUS' BLADDERPOD  
 MARGNUM: 2 TENTEN: 7,5 IDENT: Y EORANK: B  
 EORANKCOMM: SMALL POPULATION, MOST PLANTS IN UNDISTURBED HABITAT.  
 SURVEYDATE: 1986-06-10 LASTOBS: 1986-06-10 FIRSOBS: 1986 GRANK: G3  
 SRANK: S3 STATE: MT COUNTYNAME: MTLWI  
 QUADCODE: 4611177  
 QUADNAME: NELSON PRECISION: SC  
 LAT: 464924 LONG: 1114735 S: 464907 N: 464928 E: 1114728 W: 11148  
 TOWNRANGE: 012N002W SECTION: 01 MERIDIAN: PR  
 TRSCOMM: E2SE4,12N2NW4 PHYSPROV: NR WATERSHED: 10030101  
 DIRECTIONS: 0.75-1.0 AIR MILES ENE OF NELSON, 0.05-0.25 AIR MILES NORTH  
 OF BEAVER CREEK RD. (HELENA NF RD 138); ONE SMALL ROADSIDE  
 SITE 0.25 MILES NE OF NELSON.  
 GENDESC: S-FACING SHALE BARREN SLOPES; WITH OPEN PINUS PONDEROSA,  
 AGROPYRON SPICATUM, PURSHIA TRIDENTATA, CYMPTERUS  
 TEREBINTHINUS, PHACELIA LINEARIS, CHRYSOPSIS VILLOSA.  
 ELEV: 4300 SIZE: 10  
 EODATA: CA. 150 PLANTS, 3 SUBPOPULATIONS (27 PLANTS ON ROADSIDE, CA.  
 120 ON UNDISTURBED SLOPES NORTH OF ROAD); SOME CHEATGRASS  
 INVASION, AREA WAS PARTIALLY BURNED IN THE NORTH HILL FIRE  
 (1984).  
 COMMENTS: VOUCHER-SHELLY, J.S. (1089) AND G.V. KING, 1986, MONTU; SEE  
 GMF FOR ADDITIONAL MAP SHOWING SUBPOPULATIONS.  
 MACODE1: FFSNFHELE1MTUS CONTAINED1: N MACODE2: PRIVATEOWNMTUS CONTAINED2: N  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPRO  
 MOREMGMT: SITECODE:  
 SITENAME: NELSON  
 OWNER: HELENA NATIONAL FOREST; PVT.  
 OWNERCOMM:  
 PROTCOMM: TWO UNDISTURBED POPULATIONS ARE ON HELENA NF.  
 MGMTCOMM:  
 MONITOR: MONITORNUM:  
 BESTSOURCE: SHELLY, J.S. 1986. FIELD SURVEYS IN LEWIS & CLARK AND BROAD-  
 WATER COUNTIES OF 10-13 JUNE.  
 SOURCECODE: FB6SHE02MTUS PND6SHE01MTUS SB6SHEUMMTUS AB4ROL01MTUS  
 DATASENS: N BOUNDARIES: Y PHOTOS: N OWNERINFO:  
 TRANSCRIBR: 86-06-18 JSS CDREV: Y MAPPER: 86-06-18 JSS QC: Y  
 UPDATE: 88-02-09 JSS

## ELEMENT OCCURRENCE RECORD

EOCODE: PDBRAIN1Z0.008  
 NAME: LESQUERELLA KLAUSII  
 COMNAME: KLAUS' BLADDERPOD  
 MARGNUM: 3 TENTEN: 2,2 IDENT: Y EORANK: BC  
 EORANKCOMM: LARGELY NATURAL SITE, BUT BIASECTED BY A POWERLINE.  
 SURVEYDATE: 1986-06-10 LASTOBS: 1986-06-10 FIRSTOBS: 1986 GRANK: G3  
 SRANK: S3 STATE: MT COUNTYNAME: MITLEWI  
 QUADCODE: 4611176  
 QUADNAME: HOGBACK MOUNTAIN PRECISION: SC  
 LAT: 465109 LONG: 1114331 S: 465107 N: 465112 E: 1114324 W: 111430  
 TOWNRANGE: 013N001W SECTION: 28 MERIDIAN: PR  
 TRSCOMM: E2SE4,27W2SW4 PHYSPROV: NR WATERSHED: 10030101  
 DIRECTIONS: BIG BELT MOUNTAINS, ON N SIDE OF BEAVER CREEK ROAD. (HELENA  
 N.F. RD. #138) CA. 0.5 MILES ENE OF REFRIGERATOR CANYON, CA.  
 4.5 MILES NE OF NELSON.  
 GENDESC: IN COARSE TO FINE SHALE RUBBLE SOILS, ON SOUTH-FACING SLOPE;  
 PINUS PONDEROSA/AGROPYRON SPICATUM, WITH JUNIPERUS  
 SCOPULORUM, SENECIO CANUS, BERBERIS, ROSA.  
 ELEV: 4680 SIZE: 8  
 EODATA: CA. 200 PLANTS, IN FLOWER AND FRUIT; SOME PLANTS OCCUR ON  
 ROADBANK, BUT OTHERWISE MOST OCCUR ON THE UNDISTURBED SLOPE.  
 COMMENTS: VOUCHER-SHELLY, J.S. (1069) AND G.V. KING, 1986, MONTU.  
 MACODE1: FFSNFHELE1MTUS CONTAINED1: Y MACODE2: CONTAINED2:  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPRO-  
 MOREMGMT: SITECODE:  
 SITENAME: REFRIGERATOR CANYON  
 OWNER: HELENA NATIONAL FOREST  
 OWNERCOMM:  
 PROTCOMM:  
 MGMTCOMM:  
 MONITOR: MONITORNUM:  
 BESTSOURCE: SHELLY, J.S. 1986. FIELD SURVEYS IN LEWIS & CLARK AND  
 BROADWATER COUNTIES OF 10-13 JUNE.  
 SOURCECODE: FB6SHE02MTUS PND6SHE01MTUS S86SHEUMTUS A84ROL01MTUS  
 DATASENS: N BOUNDARIES: Y PHOTOS: N OWNERINFO:  
 TRANSCRIBR: 86-07-15 JSS CDREV: Y MAPPER: 86-07-15 JSS OC: Y  
 UPDATE: 88-02-09 JSS

## ELEMENT OCCURRENCE RECORD

EDCODE: PDBRA1N1Z0.009  
 NAME: LESQUERELLA KLAUSII  
 COMNAME: KLAUS' BLADDERPOD  
 MARGNUM: 4 TENTEN: 4,1 IDENT: Y EORANK: C  
 EORANKCOMM: ROAD GOES THROUGH SITE.  
 SURVEYDATE: 1986-06-10 LASTOBS: 1986-06-10 FIRSTOBS: 1986 GRANK: 63  
 SRANK: S3 STATE: MT COUNTYNAME: MTLWI  
 QUADCODE: 4611176  
 QUADNAME: HOGBACK MOUNTAIN  
 LAT: 465204 LONG: 1114139 S: 0 N: 0 E: 0 W:  
 TOWNRANGE: 013N001W SECTION: 23 MERIDIAN: PR  
 TRSCOMM: NE4SW4 PHYSPROV: NR WATERSHED: 10030101  
 DIRECTIONS: BIG BELT MOUNTAINS, ALONG BEAVER CREEK RD. (HELENA N.F. RD.  
 #138) IN BURNT GULCH, FOURTH SWITCHBACK UP FROM BEAVER  
 CREEK, CA. 6 MILES NE OF NELSON.  
 GENDESC: GRAVELLY LOAM SOILS, ON AND ABOVE ROADBANK; PSEUDOTSUGA  
 MENZIESII/AGROPYRON SPICATUM, WITH PINUS PONDEROSA, KOELERIA  
 MACRANTHA, FESTUCA, PENSTEMON.  
 ELEV: 5200 SIZE: 5  
 EODATA: CA. 150 PLANTS, IN FLOWER AND FRUIT; PLANTS OCCUR ON ROAD-  
 BANK AND IN SMALL AREA OF UNDISTURBED VEGETATION ABOVE THE  
 ROAD.  
 COMMENTS: VOUCHER - SHELLY, J.S. (1070) AND G.V. KING, 1986, MONTU.  
 MACODE1: PRIVATEOWNMTUS CONTAINED1: Y MACODE2: CONTAINED2:  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPRO  
 MOREMGMT: SITECODE:  
 SITENAME: BURNT GULCH  
 OWNER: SIEBEN LIVESTOCK COMPANY  
 OWNERCOMM:  
 PROTCOMM:  
 MGMTCOMM:  
 MONITOR: MONITORNUM:  
 BESTSOURCE: SHELLY, J.S. 1986. FIELD SURVEYS IN LEWIS & CLARK AND  
 BROADWATER COUNTIES OF 10-13 JUNE.  
 SOURCECODE: F86SHE02MTUS PND SHE01MTUS S86SHEUMMTUS A84ROL01MTUS  
 DATASENS: N BOUNDARIES: N PHOTOS: N OWNERINFO:  
 TRANSCRIBR: 86-07-15 JSS CDREV: Y MAPPER: 86-07-15 JSS DC: Y  
 UPDATE: 88-01-13 JSS

## ELEMENT OCCURRENCE RECORD

EOCODE: PDBRAIN1Z0.010  
 NAME: LESQUERELLA KLAUSII  
 COMNAME: KLAUS' BLADDERPOD  
 MARGNUM: 5 TENTEN: 6,10 IDENT: Y EORANK: BC  
 EORANKCOMM: UNDISTURBED SITE, BUT POPULATION IS VERY SMALL.  
 SURVEYDATE: 1986-06-11 LASTOBS: 1986-06-11 FIRSTOBS: 1986 GRANK: G3  
 SRANK: S3 STATE: MT COUNTYNAME: MTLWEI  
 QUADCODE: 4611176  
 QUADNAME: HOGBACK MOUNTAIN PRECISION: SC  
 LAT: 464505 LONG: 1114108 S: 0 N: 0 E: 0 W:  
 TOWNRANGE: 012N001W SECTION: 35 MERIDIAN: PR  
 TRSCOMM: SE4E2 PHYSPROV: NR WATERSHED: 10030101  
 DIRECTIONS: BIG BELT MOUNTAINS, BLACKSMITH GULCH, 0.35 AIR MILES W OF  
 TRDUT CREEK ROAD (HELENA N.F. RD. #4021). CA. 4 MILES NE OF  
 YORK.  
 GENDESC: SHALE RUBBLE SOILS, SOUTH-FACING SLOPE; PINUS PONDEROSA/  
 PSEUDOTSUGA MENZIESII/AGROPYRON SPICATUM, WITH ARTEMISIA  
 FRIGIDA, PENSTEMON ERIANTHERUS, SENECIO CANUS.  
 ELEV: 4600 SIZE: 5  
 EODATA: SMALL POPULATION, 20-25 PLANTS; VERY SPARSE POPULATION, IN  
 UNDISTURBED HABITAT; IN FRUIT.  
 COMMENTS: VOUCHER - SHELLY, J.S. (1092) AND G.V. KING, 1986, MONTU.  
 MACODE1: FFSNFHELE1MTUS CONTAINED1: Y MACODE2: CONTAINED2:  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPROT  
 MOREMGMT: SITECODE:  
 SITENAME: BLACKSMITH GULCH  
 OWNER: HELENA NATIONAL FOREST  
 OWNERCOMM:  
 PROTCOMM:  
 MGMTCOMM:  
 MONITOR: MONITORNUM:  
 BESTSOURCE: SHELLY, J.S. 1986. FIELD SURVEYS IN LEWIS & CLARK AND  
 BROADWATER COUNTIES OF 10-13 JUNE.  
 SOURCECODE: F86SHE02MTUS PND8SHE01MTUS S86SHEUMTUS A84ROL01MTUS  
 DATASENS: N BOUNDARIES: N PHOTOS: N OWNERINFO:  
 TRANSCRIBR: 86-07-15 JSS CDREV: Y MAPPER: 86-07-15 JSS OC: Y  
 UPDATE: 88-02-09 JSS

## ELEMENT OCCURRENCE RECORD

EOCODE: PDBRAINIZ0.011  
 NAME: LESQUERELLA KLAUSII  
 COMNAME: KLAUS' BLADDERPOD  
 MARGNUM: 1 TENTEN: 2,2 IDENT: Y EORANK: BC  
 EORANKCOMM: FAIRLY SMALL POPULATION, ADJACENT TO ROAD.  
 SURVEYDATE: 1986-06-11 LASTOBS: 1986-06-11 FIRSTOBS: 1986 GRANK: G3  
 SRANK: S3 STATE: MT COUNTYNAME: MTLWI  
 QUADCODE: 4611166  
 QUADNAME: CANYON FERRY PRECISION: SC  
 LAT: 464403 LONG: 1114334 S: 0 N: 0 E: 0 W:  
 TOWNRANGE: 011N001W SECTION: 04 MERIDIAN: PR  
 TRSCOMM: SE4SE4 PHYSPROV: NR WATERSHED: 10030101  
 DIRECTIONS: BIG BELT MOUNTAINS, E. SIDE OF MOUTH OF KELLY GULCH, 0.1  
 MILE N. OF TROUT CREEK RD. (HELENA N.F. RD. #4021), CA. 1.25  
 MILES NE OF YORK.  
 GENDESC: TAN-RED COLORED GRAVELLY LOAM SOIL, SW-FACING SLOPE; PINUS  
 PONDEROSA/PSEUDOTSUGA MENZIESII/AGROPYRON SPICATUM, WITH  
 ORYZOPSIS HYMENOIDES, RHUS.  
 ELEV: 4200 SIZE: 5  
 EODATA: CA. 50-60 PLANTS, IN FRUIT; UNDISTURBED SITE, THOUGH ADJA-  
 CENT TO SEVERAL RESIDENCES.  
 COMMENTS: VOUCHER - SHELLY, J.S. (1093) AND G.V. KING, 1986, MONTU.  
 MACODE1: FFSNFHELE1MTUS CONTAINED1: Y MACODE2: CONTAINED2:  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPROT  
 MOREMGMT: SITECODE:  
 SITENAME: KELLY GULCH  
 OWNER: HELENA NATIONAL FOREST  
 OWNERCOMM:  
 PROTCOMM:  
 MGMTCOMM:  
 MONITOR: MONITORUM:  
 BESTSOURCE: SHELLY, J.S. 1986. FIELD SURVEYS IN LEWIS & CLARK AND  
 BROADWATER COUNTIES OF 10-13 JUNE.  
 SOURCECODE: F86SHE02MTUS PND8SHE01MTUS S86SHEUMMTUS A84ROL01MTUS  
 DATASENS: N BOUNDARIES: N PHOTOS: N OWNERINFO:  
 TRANSCRIBR: 86-07-15 JSS CDREV: Y MAPPER: 86-07-15 JSS GC: Y  
 UPDATE: 88-02-09 JSS

## ELEMENT OCCURRENCE RECORD

EOCODE: PDBRAINIZ0.012  
 NAME: LESQUERELLA KLAUSII  
 COMNAME: KLAUS' BLADDERPOD  
 MARGNUM: 1 TENTEN: 10,3 IDENT: Y EORANK: D  
 EORANKCOMM: SMALL POPULATION, MOST PLANTS ON ROADBANK.  
 SURVEYDATE: 1986-06-11 LASTOBS: 1986-06-11 FIRTOBS: 1986 GRANK: G3  
 SRANK: S3 STATE: MT COUNTYNAME: MTLLEWI  
 QUADCODE: 4611167  
 QUADNAME: HAUSER LAKE PRECISION: SC  
 LAT: 464257 LONG: 1114518 S: 464254 N: 464258 E: 1114509 W: 111452  
 TOWNRANGE: 011N001W SECTION: 17 MERIDIAN: PR  
 TRSCOMM: W2NE4 PHYSPROV: NR WATERSHED: 10030101  
 DIRECTIONS: BIG BELT MOUNTAINS, PRICES GULCH, HELENA N.F. ROAD #224,  
 0.1-0.2 MILES E. OF TROUT CREEK RD. (HELENA N.F. RD #4021),  
 JUST S. OF YORK.  
 GENDESC: ROADSIDE RUBBLE, AND THIN ROCKY SOILS IN FOREST; WITH  
 PSEUDOTSUGA MENZIESII, AGROPYRON SPICATUM, PENSTEMON  
 ERIANTHERUS.  
 ELEV: 4000 SIZE: 2  
 EODATA: 2 SUBPOPULATIONS: 14 ON ROADSIDE, 4 IN ADJACENT FOREST; IN  
 FRUIT.  
 COMMENTS: VOUCHER - SHELLY, J.S. (1094) AND G.V. KING, 1986, MONTU.  
 MACODE1: FFSNFHELE1MTUS CONTAINED1: MACODE2: PRIVATEOWNMTUS CONTAINED2:  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPRO1  
 MOREMGMT: SITECODE:  
 SITENAME: PRICES GULCH  
 OWNER: HELENA NATIONAL FOREST; PVT.  
 OWNERCOMM:  
 PROTCOMM: SITE IS PROBABLY ALL ON USFS THOUGH PVT IS ADJACENT.  
 MGMTCOMM:  
 MONITOR: MONITORNUM:  
 BESTSOURCE: SHELLY, J.S. 1986. FIELD SURVEYS IN LEWIS & CLARK AND  
 BROADWATER COUNTIES OF 10-13 JUNE.  
 SOURCECODE: FB6SHE02MTUS PND6SHE01MTUS S86SHEUMMTUS A84ROL01MTUS  
 DATASENS: N BOUNDARIES: Y PHOTOS: N OWNERINFO:  
 TRANSCRIBR: 86-07-15 JSS CDREV: Y MAPPER: 86-07-15 JSS GC: Y  
 UPDATE: 88-02-09 JSS

## ELEMENT OCCURRENCE RECORD

EOCODE: PDBRA1NIZ0.013  
 NAME: LESQUERELLA KLAUSII  
 COMNAME: KLAUS' BLADDERPOD  
 MARGNUM: 3 TENTEN: 5,3 IDENT: Y EORANK: AB  
 EORANKCOMM: FAIRLY LARGE POPULATION, UNDISTURBED HABITAT.  
 SURVEYDATE: 1986-10-19 LASTOBS: 1987-06-02 FIRSTOBS: 1986 GRANK: G3  
 SRANK: S3 STATE: MT COUNTYNAME: MTLWI  
 QUADCODE: 4611177  
 QUADNAME: NELSON PRECISION: SC  
 LAT: 465028 LONG: 1114910 S: 465025 N: 465048 E: 1114905 W: 1114920  
 TOWNRANGE: 013N002W SECTION: 35 MERIDIAN: PR  
 TRSCOMM: CENTER,NE4NW4 PHYSPROV: NR WATERSHED: 10030101  
 DIRECTIONS: BIG BELT MOUNTAINS, GATES OF THE MOUNTAINS WILDERNESS;  
 SLOPES BETWEEN BIG LOG GULCH AND HUNTERS GULCH, CA. 1.6 AIR  
 MI. NNW. OF NELSON.  
 GENDESC: SOUTH-FACING SLOPE, GRAVELLY LIMESTONE RUBBLE; WITH PINUS  
 PONDEROSA, AGROPYRON SPICATUM, FESTUCA SCABRELLA, ACHILLEA  
 MILLEFOLIUM, ARTEMISIA FRIGIDA.  
 ELEV: 4900 SIZE: 10  
 EODATA: SEVERAL HUNDRED PLANTS, IN TWO SUBPOPULATIONS; AREA BURNED  
 IN 1984 FIRE.

COMMENTS: VOUCHER-SHELLY, J.S. (1307) AND G.V. KING, 1986, MONTU.

MACODE1: FFSWAGATE1MTUS CONTAINED1: Y MACODE2: FFSNFHELE1MTUS CONTAINED2: Y  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPRO

MOREMGMT: SITECODE:  
 SITENAME: BIG LOG GULCH-HUNTERS GULCH RIDGE  
 OWNER: HELENA NATIONAL FOREST  
 OWNERCOMM:  
 PROTCOMM: LOCATED IN GATES OF THE MOUNTAINS WILDERNESS AREA.  
 MGMTCOMM:  
 MONITOR: MONITORNUM:  
 BESTSOURCE: SHELLY, J.S. MT NATURAL HERITAGE PROGRAM, STATE LIBRARY,  
 1515 E. 6th AVE., HELENA, MT 59620.  
 SOURCECODE: PNDSE01MTUS S86SHEUMMTUS A84ROL01MTUS

DATASENS: N BOUNDARIES: Y PHOTOS: N OWNERINFO:  
 TRANSCRIBR: 86-10-21 JSS CDREV: Y MAPPER: 86-10-27 JSS OC: Y  
 UPDATE: 88-02-09 JSS

## ELEMENT OCCURRENCE RECORD

ECODE: PDBRAIN1Z0.014  
 NAME: LESQUERELLA KLAUSII  
 COMNAME: KLAUS' BLADDERPOD  
 MARGNUM: 7 TENTEN: 1,1 IDENT: Y EORANK: A  
 EORANKCOMM: LARGE POPULATION IN VIRTUALLY UNDISTURBED AREA.  
 SURVEYDATE: 1987-05-15 LASTOBS: 1987-05-15 FIRTOBS: 1987 GRANK: G3  
 SRANK: S3 STATE: MT COUNTYNAME: MTLWEI  
 QUADCODE: 4611176 4611177  
 QUADNAME: HOGBACK MOUNTAIN, NELSON PRECISION: SC  
 LAT: 465216 LONG: 1114500 S: 465202 N: 465223 E: 1114434 W: 1114500  
 TOWNRANGE: 013N001W SECTION: 20 MERIDIAN: PR  
 TRSCOMM: N2,21NW4SW4 PHYSPROV: NR WATERSHED: 10030101  
 DIRECTIONS: FROM YORK, NORTH ON DRY GULCH ROAD TO BEAVER CREEK ROAD;  
 BEAVER CREEK ROAD TO REFRIGERATER CANYON, AND NORTH ON  
 HIKING TRAIL CA. 2 MILES.  
 GENDESC: SHALE BARRENS; PSEUDOTSUGA MENZIESII/AGROPYRON SPICATUM,  
 WITH BALSAMORHIZA SAGITTATA, LOMATIUM DISSECTUM, PENSTEMON  
 ALBERTINUS, ERIGERON COMPOSITUS, ARTEMISIA, ERIOGONUM.  
 ELEV: 6120 SIZE: 60  
 EODATA: EST. 2000-3000+ PLANTS, 3 SUBPOPULATIONS; HABITAT IS  
 UNDISTURBED, EXCEPT FOR NEARBY HIKING TRAIL; FLOWERS AND  
 EARLY FRUIT.

COMMENTS: VOUCHER-SHELLY, J.S. (1308), 1987, MONTU.

MACODE1: FFSWAGATE1MTUS CONTAINED1: Y MACODE2: FFSNFHELE1MTUS CONTAINED2: Y  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPROT

MOREMGMT: SITECODE:  
 SITENAME: SHEEP MOUNTAIN PASS  
 OWNER: HELENA NATIONAL FOREST  
 OWNERCOMM:  
 PROTCOMM: LOCATED IN THE GATES OF THE MOUNTAINS WILDERNESS AREA.  
 MGMTCOMM:  
 MONITOR: MONITORNUM:  
 BESTSOURCE: SHELLY, J.S. 1987. FIELD SURVEYS IN LEWIS & CLARK AND  
 MEAGHER COS. OF 15 MAY, 28 MAY, 2 JUNE, & 8-11 JUNE.  
 SOURCECODE: F87SHE01MTUS S87SHEUMMTUS P87SHEUMMTUS

DATASENS: N BOUNDARIES: Y PHOTOS: Y OWNERINFO:  
 TRANSCRIBR: 87-07-07 JEG CDREV: Y MAPPER: 87-07-08 JEG GC: Y  
 UPDATE: 88-02-10 JSS



## ELEMENT OCCURRENCE RECORD

ECODE: PDBRAIN1Z0.015  
 NAME: LESQUERELLA KLAUSII  
 COMNAME: KLAUS' BLADDERPOD  
 MARGNUM: 8 TENTEN: 2,2 IDENT: Y EORANK: B  
 EORANKCOMM: MEDIUM-SIZED POPULATIONS; LITTLE USED AREA.  
 SURVEYDATE: 1987-05-15 LASTOBS: 1987-05-15 FIRSTOBS: 1987 GRANK: G3  
 SRANK: S3 STATE: MT COUNTYNAME: MTLWI  
 QUADCODE: 4611176  
 QUADNAME: HOGBACK MOUNTAIN PRECISION: SC  
 LAT: 465136 LONG: 1114409 S: 465132 N: 465147 E: 1114402 W: 1114402  
 TOWNRANGE: 013N001W SECTION: 28 MERIDIAN: PR  
 TRSCOMM: E2NW4 PHYSPROV: NR WATERSHED: 10030101  
 DIRECTIONS: FROM YORK, NORTH ON DRY GULCH ROAD ABOUT 5.5 MILES TO  
 BEAVER CREEK ROAD; UP BEAVER CREEK RD. CA. 5 MILES TO  
 REFRIGERATOR CANYON, AND CA. 1 MILE NORTH ON HIKING TRAIL.  
 GENDESC: LIMESTONE RUBBLE SOILS; PSEUDOTSUGA MENZIESII/AGROPYRON  
 SPICATUM, WITH PENSTEMON ERIANTHERUS, JUNIPERUS COMMUNIS,  
 J. SCOPULORUM, SENECIO CANUS, SMILACINA.  
 ELEV: 5120 SIZE: 2  
 EODATA: EST. 400-500 PLANTS IN 2 SUBPOPULATIONS; FLOWERS AND EARLY  
 FRUIT; HIKING TRAIL TRAVERSES POPULATIONS.  
 COMMENTS: VOUCHER-SHELLY, J.S. (1309), 1987, MONTU.  
 MACODE1: FFSNFHELE1MTUS CONTAINED1: Y MACODE2: CONTAINED2:  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPRO:  
 MOREMGMT: SITECODE:  
 SITENAME: MOORS CREEK  
 OWNER: HELENA NATIONAL FOREST  
 OWNERCOMM:  
 PROTCOMM: SITE IS JUST OUTSIDE GATES OF THE MOUNTAINS WILDERNESS.  
 MGMTCOMM:  
 MONITOR: MONITORNUM:  
 BESTSOURCE: SHELLY, J.S. 1987. FIELD SURVEYS IN LEWIS & CLARK AND  
 MEAGHER COS. OF 15 MAY, 28 MAY, 2 JUNE, & 8-11 JUNE.  
 SOURCECODE: F87SHE01MTUS S87SHEUMMTUS PND8SHE01MTUS  
 DATASENS: N BOUNDARIES: Y PHOTOS: Y OWNERINFO:  
 TRANSCRIBR: 87-07-06 JSS CDREV: Y MAPPER: 87-07-09 JEG OC: Y  
 UPDATE: 88-02-09 JSS

## ELEMENT OCCURRENCE RECORD

EOCODE: PDBRAIN1Z0.016  
 NAME: LESQUERELLA KLAUSII  
 COMNAME: KLAUS' BLADDERPOD  
 MARGNUM: 9 TENTEN: 2,10 IDENT: Y EORANK: A  
 EORANKCOMM: POPULATION & HABITAT CURRENTLY IN EXCELLENT CONDITION.  
 SURVEYDATE: 1987-05-28 LASTOBS: 1987-05-28 FIRSTOBS: 1987 GRANK: 63  
 SRANK: S3 STATE: MT COUNTYNAME: MTLERI  
 QUADCODE: 4611176  
 QUADNAME: HOGBACK MOUNTAIN PRECISION: SC  
 LAT: 464538 LONG: 1114404 S: 464519 N: 464544 E: 1114345 W: 111444  
 TOWNRANGE: 012N001W SECTION: 33 MERIDIAN: PR  
 TRSCOMM: N2NE4,28SE4 PHYSPROV: NR WATERSHED: 10030101  
 DIRECTIONS: FROM YORK, NORTH ON DRY GULCH ROAD CA. 2.2 MILES TO BULL RUN  
 GULCH, AND UP GULCH (EAST) CA. 1.1 MILES.

GENDESC: SHALE RUBBLE; PIPO/PSME/AGSP, WITH CHRYSOPSIS VILLOSA,  
 LOMATIUM DISSECTUM, CIRSIUM UNDULATUM, AMELANCHIER  
 ALNIFOLIA, PENSTEMON ATTENUATUS.

ELEV: 5120 SIZE: 15  
 EODATA: EST. 750-1000+ PLANTS, 3 SUBPOPULATIONS; FLOWERS AND FRUIT;  
 HABITAT LARGELY UNDISTURBED, BUT 2 MINE CLAIM POSTS ON SITE.

COMMENTS: VOUCHER-SHELLY, J.S. (1310). 1987. MONTU.

MACODE1: FFSNFHELE1MTUS CONTAINED1: Y MACODE2: CONTAINED2:  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPRO

MOREMGMT: SITECODE:  
 SITENAME: BULL RUN GULCH  
 OWNER: HELENA NATIONAL FOREST

OWNERCOMM:

PROTCOMM:

MGMTCOMM:

MONITOR:

MONITORNUM:

BESTSOURCE: SHELLY, J.S. 1987. FIELD SURVEYS IN LEWIS & CLARK AND  
 MEAGHER COS. OF 15 MAY, 28 MAY, 2 JUNE, & 8-11 JUNE.  
 SOURCECODE: F87SHE01MTUS S87SHEUMMTUS P87SHE01MTUS

DATASENS: N BOUNDARIES: Y PHOTOS: Y OWNERINFO:  
 TRANSCRIBR: 87-07-07 JEG CDREV: Y MAPPER: 87-07-09 JEG QC: Y  
 UPDATE: 88-02-09 JSS

## ELEMENT OCCURRENCE RECORD

EOCODE: PDBRAINIZ0.017  
 NAME: LESQUERELLA KLAUSII  
 CONNAME: KLAUS' BLADDERPOD  
 MARGNUM: 7 TENTEN: 9,8 IDENT: Y EORANK: A  
 EORANKCOMM: LARGE POPULATION, HABITAT IN GOOD TO EXCELLENT CONDITION.  
 SURVEYDATE: 1987-05-28 LASTOBS: 1987-05-28 FIRSTOBS: 1987 GRANK: G3  
 SRANK: S3 STATE: MT COUNTYNAME: MLEWI  
 QUADCODE: 4611177  
 QUADNAME: NELSON PRECISION: SC  
 LAT: 464713 LONG: 1114615 S: 464705 N: 464755 E: 1114503 W: 1114603  
 TOWNRANGE: 012N001W SECTION: 19 MERIDIAN: PR  
 TRSCOMM: NE4,20W2NR,17E2SW4+ PHYSPROV: NR WATERSHED: 10030101  
 DIRECTIONS: TRSCOMM CONT.: 17N2SE4. FROM YORK, NORTH ON DRY GULCH ROAD  
 CA. 3 MILES TO JEEP TRAIL; NORTHEAST ON TRAIL CA. 0.6 MILES  
 TO SITE, ON NORTH SIDE OF SWEATS GULCH.  
 GENDESC: SHALE RUBBLE; PIPO/PSME/AGSP, WITH PURSHIA TRIDENTATA, RHUS  
 TRILOBATA, PHACELIA HASTATA, ROSA SAYI, PENSTEMON  
 ATTENUATUS, LOMATIUM, ASCLEPIAS.  
 ELEV: 4960 SIZE: 15  
 EODATA: 3 SUBPOPULATIONS: 1)500-600+, 2)15, 3)30-40; FLOWERS AND  
 FRUIT; HABITAT MOSTLY UNDISTURBED; ORV TRAIL ALONG RIDGE.  
 COMMENTS: VOUCHER-SHELLY, J.S. (1311), 1987, MONTU.  
 MACODE1: FFSNFHELE1MTUS CONTAINED1: Y MACODE2: CONTAINED2:  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPRO:  
 MOREMGMT: SITECODE:  
 SITENAME: SWEATS GULCH  
 OWNER: HELENA NATIONAL FOREST  
 OWNERCOMM:  
 PROTCOMM:  
 MGMTCOMM:  
 MONITOR: MONITORNUM:  
 BESTSOURCE: SHELLY, J.S. 1987. FIELD SURVEYS IN LEWIS & CLARK AND  
 MEAGHER COS. OF 15 MAY, 28 MAY, 2 JUNE, & 8-11 JUNE.  
 SOURCECODE: F87SHE01MTUS S87SHEUMMTUS P87SHE01MTUS  
 DATASENS: N BOUNDARIES: Y PHOTOS: Y OWNERINFO:  
 TRANSCRIBR: 87-07-07 JEG CDREV: Y MAPPER: 87-07-09 JEG QC: Y  
 UPDATE: 88-02-09 JSS

## ELEMENT OCCURRENCE RECORD

EOCODE: PDBRAIN120.018  
 NAME: LESQUERELLA KLAUSII  
 COMNAME: KLAUS' BLADDERPOD  
 MARGNUM: 8 TENTEN: 5,2 IDENT: Y EORANK: B  
 EORANKCOMM: MODERATE POPULATION SIZE, IN UNDISTURBED HABITAT.  
 SURVEYDATE: 1987-06-02 LASTOBS: 1987-06-02 FIRSTOBS: 1987 GRANK: 63  
 SRANK: S3 STATE: MT COUNTYNAME: MTLWEI  
 QUADCODE: 4611177  
 QUADNAME: NELSON PRECISION: SC  
 LAT: 465127 LONG: 1114855 S: 465124 N: 465129 E: 1114851 W: 111485  
 TOWNRANGE: 013N002W SECTION: 26 MERIDIAN: PR  
 TRSCOMM: NE4 PHYSPROV: NR WATERSHED: 10030101  
 DIRECTIONS: FROM YORK, NORTH ON DRY GULCH ROAD TO BEAVER CREEK (NELSON);  
 BEAVER CREEK ROAD WEST FOR 0.3 MILES, THEN JEEP TRAIL NORTH  
 CA.1 MILE AND PACK TRAIL NORTH CA. 3 MILES TO KEEPOUT GULCH.  
 GENDESC: LIMESTONE RUBBLE; PINUS PONDEROSA/PSEUDOTSUGA MENZIESII/  
 AGROPYRON SPICATUM, WITH JUNIPERUS COMMUNIS, ARCTOSTAPHYLOS  
 UVA-URSI, SMILACINA, LINUM, APOCYNUM, ACHILLEA.  
 ELEV: 5400 SIZE: 2  
 EODATA: EST. 200-300+ PLANTS; UNDISTURBED HABITAT; FLOWERS AND  
 FRUIT.

COMMENTS: VOUCHER-SHELLY, J.S. (1312), 1987, MONTU.

MACODE1: FFSWAGATE1MTUS CONTAINED1: Y MACODE2: FFSNFHELE1MTUS CONTAINED2: Y  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPRO

MOREMGMT: SITECODE:  
 SITENAME: KEEPOUT GULCH  
 OWNER: HELENA NATIONAL FOREST

OWNERCOMM:  
 PROTCOMM: LOCATED IN GATES OF THE MOUNTAINS WILDERNESS AREA.

MGMTCOMM:

MONITOR:

MONITORNUM:

BESTSOURCE: SHELLY, J.S. 1987. FIELD SURVEYS IN LEWIS & CLARK AND  
 MEAGHER COS. OF 15 MAY, 28 MAY, 2 JUNE, & 8-11 JUNE.  
 SOURCECODE: F07SHE01MTUS S87SHEUMMTUS P87SHE01MTUS

DATASENS: N BOUNDARIES: Y PHOTOS: Y OWNERINFO:  
 TRANSCRIBR: 87-07-07 JEG CDREV: Y MAPPER: 87-07-09 JEG OC: Y  
 UPDATE: 88-02-10 JSS

## ELEMENT OCCURRENCE RECORD

EOCODE: PDBRA1N1Z0.019  
 NAME: LESQUERELLA KLAUSII  
 CONNAME: KLAUS' BLADDERPOD  
 MARGNUM: 1 TENTEN: 1,8 IDENT: Y EORANK: B  
 EORANKCOMM: GOOD POPULATION, IN AN INTERESTING AREA.  
 SURVEYDATE: 1987-06-08 LASTOBS: 1987-06-08 FIRSTOBS: 1987 GRANK: G3  
 SRANK: S3 STATE: MT COUNTYNAME: MTMEAG  
 QUADCODE: 4611067  
 QUADNAME: CHARCOAL GULCH PRECISION: SC  
 LAT: 463919 LONG: 1105223 S: 463916 N: 463947 E: 1105218 W: 1105223  
 TOWNRANGE: 010N007E SECTION: 05 MERIDIAN: PR  
 TRSCOMM: NW4SE4 & SW4NE4 PHYSPROV: NR WATERSHED: 10030103  
 DIRECTIONS: 9.5 MILES (7.5 AIR MILES) NORTH OF WHITE SULPHUR SPRINGS ON  
 US HWY 89, ON WEST SIDE OF ROAD.

GENDESC: SHALE BARRENS; PSEUDOTSUGA MENZIESII/JUNIPERUS SCOPULORUM/  
 AGROPYRON SPICATUM/ARTEMISIA TRIDENTATA, WITH POTENTILLA,  
 PHACELIA, TOWNSENDIA, ERIGERON, FESTUCA, SENECIO, PINUS.

ELEV: 5520 SIZE: 10  
 EODATA: EST. 300-400 PLANTS; FLOWERS AND FRUIT; HEAVY GRAZING IN  
 ADJACENT AREAS, AND IN SOME PORTIONS OF SITE.

COMMENTS: VOUCHER-SHELLY, J.S. (1317), 1987, MONTU.

MACODE1: SSLGNXXX1MTUS CONTAINED1: N MACODE2: PRIVATEOWNMTUS CONTAINED2: N  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPROT

MOREMGMT: SITECODE:  
 SITENAME: BUTLER HILL  
 OWNER: STATE OF MONTANA; PRIVATE

OWNERCOMM:

PROTCOMM:

MGMTCOMM:

MONITOR:

MONITORNUM:

BESTSOURCE: SHELLY, J.S. 1987. FIELD SURVEYS IN LEWIS & CLARK AND  
 MEAGHER COS. OF 15 MAY, 28 MAY, 2 JUNE, & 8-11 JUNE.

SOURCECODE: FB7SHE01MTUS SB7SHEUMMTUS PND7SHE01MTUS

DATASENS: N BOUNDARIES: Y PHOTOS: Y OWNERINFO:  
 TRANSCRIBR: 87-07-07 JEG CDREV: Y MAPPER: 87-07-08 JEG OC: Y  
 UPDATE: 88-02-09 JSS

## ELEMENT OCCURRENCE RECORD

EOCODE: PDBRAINIZ0.020  
 NAME: LESQUERELLA KLAUSII  
 COMNAME: KLAUS' BLADDERPOD  
 MARGNUM: 2 TENTEN: 1,3 IDENT: Y EORANK: B  
 EORANKCOMM: LARGE POPULATIONS, IN FAIRLY UNDISTURBED SETTINGS.  
 SURVEYDATE: 1987-06-08 LASTOBS: 1987-06-08 FIRSTOBS: 1987 GRANK: G3  
 SRANK: S3 STATE: MT COUNTYNAME: MTMEAG  
 QUADCODE: 4611067  
 QUADNAME: CHARCOAL GULCH PRECISION: SC  
 LAT: 464312 LONG: 1105200 S: 464258 N: 464321 E: 1105139 W: 11052  
 TOWNRANGE: 011N007E SECTION: 17 MERIDIAN: PR  
 TRSCOMM: NE4,16NW4 PHYSPROV: NR WATERSHED: 10030103  
 DIRECTIONS: CA. 14.6 MILES (12 AIR MILES) NORTH OF WHITE SULPHUR SPRINGS  
 ON US HWY 89, 0.4 MILES NORTH ON GRAVEL ROAD TO THORNQUIST  
 GULCH; ALSO IN NEXT GULCH (UNNAMED) TO THE SOUTH.  
 GENDESC: GRAVEL, GRAVEL LOAM; PSEUDTSUGA MENZIESII/ARTEMISIA  
 TRIDENTATA/AGROPYRON SPICATUM/FESTUCA SCABRELLA/JUNIPERUS  
 SCOPULORUM, WITH FESTUCA IDAHOENSIS, TOWNSENDIA PARRYI.  
 ELEV: 5680 SIZE: 20  
 EODATA: 3 SUBPOPULATIONS: 1)109+, 2)SOUTH GULCH 300-400,  
 3)THORNQUIST GULCH 1500-2000; LATE FLOWER AND FRUIT; LIGHT  
 GRAZING IN SOME PORTIONS OF HABITAT.

COMMENTS: VOUCHER-SHELLY, J.S. (1318), 1987, MONTU.

MACODE1: FFSNFLEWI1MTUS CONTAINED1: Y MACODE2: CONTAINED2:  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPRO

MOREMGMT: SITECODE:  
 SITENAME: THORNQUIST GULCH  
 OWNER: LEWIS & CLARK NATIONAL FOREST  
 OWNERCOMM:  
 PROTCOMM:  
 MGMTCOMM:  
 MONITOR: MONITORNUM:  
 BESTSOURCE: SHELLY, J.S. 1987. FIELD SURVEYS IN LEWIS & CLARK AND  
 MEAGHER COS. OF 15 MAY, 28 MAY, 2 JUNE, & 8-11 JUNE.  
 SOURCECODE: F87SHE01MTUS S87SHEUMMTUS P87SHE01MTUS

DATASENS: N BOUNDARIES: Y PHOTOS: Y OWNERINFO:  
 TRANSCRIBR: 87-07-07 JEG CDREV: Y MAPPER: 87-07-08 JEG QC: Y  
 UPDATE: 88-02-09 JSS

## ELEMENT OCCURRENCE RECORD

EOCODE: PDBRAINIZ0.021  
 NAME: LESQUERELLA KLAUSII  
 COMNAME: KLAUS' BLADDERPOD  
 MARGNUM: 2 TENTEN: 7,9 IDENT: Y EORANK: D  
 EORANKCOMM: SPARSE POPULATION, ADJACENT TO COUNTY ROAD.  
 SURVEYDATE: 1987-06-09 LASTOBS: 1987-06-09 FIRSTOBS: 1987 GRANK: G3  
 SRANK: S3 STATE: MT COUNTYNAME: MTMEAG  
 QUADCODE: 4611068  
 QUADNAME: COXCOMBE BUTTE PRECISION: M  
 LAT: 463840 LONG: 1105519 S: 0 N: 0 E: 0 W:  
 TOWNRANGE: 010N06E SECTION: 12 MERIDIAN: PR  
 TRSCOMM: NW4 PHYSPROV: NR WATERSHED: 10030103  
 DIRECTIONS: 11.3 MILES NORTH OF WHITE SULPHUR SPRINGS ON US HWY 89, THEN  
 ABOUT 3 MILES SOUTHWEST ON NEWLAN CREEK ROAD TO RESERVOIR.  
 SITE IS ON NORTH SIDE OF ROAD.  
 GENDESC: PINUS PONDEROSA/PSEUDOTSUGA MENZIESII/AGROPYRON SPICATUM,  
 WITH LESQUERELLA ALPINA, SENECIO CANUS, PHACELIA HASTATA,  
 ALYSSUM ALYSSOIDES.  
 ELEV: 5360 SIZE: 0  
 EODATA: EST. 8 PLANTS ON ROADBANK, 11 COUNTED ON NATIVE SLOPE ABOVE.

COMMENTS: POSTED PRIVATE LAND, MORE PLANTS PROBABLY IN AREA.  
 VOUCHER-SHELLY, J.S. (1321), 1987, MONTU.

MACODE1: PRIVATEOWNMTUS CONTAINED1: MACODE2: CONTAINED2:  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPROT

MOREMGMT: SITECODE:  
 SITENAME: NEWLAN CREEK RESERVOIR  
 OWNER: PRIVATE LAND  
 OWNERCOMM:  
 PROTCOMM:  
 MGMTCOMM:  
 MONITOR: MONITORNUM:  
 BESTSOURCE: SHELLY, J.S. 1987. FIELD SURVEYS IN LEWIS & CLARK AND  
 MEAGHER COS. OF 15 MAY, 28 MAY, 2 JUNE, & 8-11 JUNE.  
 SOURCECODE: F87SHE01MTUS S87SHEUMMTUS P87SHE01MTUS

DATASENS: N BOUNDARIES: N PHOTOS: N OWNERINFO:  
 TRANSCRIBR: 87-07-07 JEG CDREV: Y MAPPER: 87-07-08 JEG OC: Y  
 UPDATE: 88-02-09 JSS

## ELEMENT OCCURRENCE RECORD

EOCODE: PDBRAIN1Z0.022  
 NAME: LESQUERELLA KLAUSII  
 COMNAME: KLAUS' BLADDERPOD  
 MARGNUM: 2 TENTEN: 4,6 IDENT: Y EORANK: A  
 EORANKCOMM: LARGE POPULATIONS, BASICALLY UNDISTURBED.  
 SURVEYDATE: 1987-06-10 LASTOBS: 1987-06-10 FIRSTOBS: 1987 GRANK: G3  
 SRANK: S3 STATE: MT COUNTYNAME: MTLWEI  
 QUADCODE: 4711213  
 QUADNAME: ROGERS PASS PRECISION: SC  
 LAT: 470340 LONG: 1121950 S: 470252 N: 470448 E: 1121915 W: 11221  
 TOWNRANGE: 015N006W SECTION: 14 MERIDIAN: PR  
 TRSCOMM: NW4,10SE4,10NW4, + PHYSPROV: NR WATERSHED: 10030102  
 DIRECTIONS: TRSCOMM CONT.: 3SW4SW4,23N2NE4. STATE HWY 200 NORTHEAST FROM  
 LINCOLN 10.5 MILES TO ROGERS PASS; ALONG CONTINENTAL DIVIDE  
 SOUTHEAST OF PASS FOR 0.75-4 MILES.  
 GENDESC: OPEN SHALE SLOPES AND GRAVELLY AREAS; PINUS CONTORTA/  
 AGROPYRON SPICATUM/FESTUCA VIRIDULA, WITH ERITRICHUM NANUM,  
 ERIOGONUM OVALIFOLIUM, ASTRAGALUS, OXYTROPIS, POTENTILLA.  
 ELEV: 6800 SIZE: 180  
 EODATA: 2000 OR MORE PLANTS, NINE SUBPOPULATIONS, SCATTERED ALONG  
 CONTINENTAL DIVIDE; DIFFICULT TO ESTIMATE POPULATION SIZE  
 DUE TO EXPANSE OF POPULATION; HABITAT UNDISTURBED; FLOWERS  
 AND EARLY FRUIT.  
 COMMENTS: VOUCHER-SHELLY, J.S. (1325), 1987, MONTU.  
 BORDERS WATERSHED 17010203.  
 MACODE1: FFSNFHELEIMTUS CONTAINED1: Y MACODE2: CONTAINED2:  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPRO  
 MOREMGMT: SITECODE:  
 SITENAME: ROGERS PASS EAST  
 OWNER: HELENA NATIONAL FOREST  
 OWNERCOMM:  
 PROTCOMM:  
 MGMTCOMM:  
 MONITOR: MONITORNUM:  
 BESTSOURCE: SHELLY, J.S. 1987. FIELD SURVEYS IN LEWIS & CLARK AND  
 MEAGHER COS. OF 15 MAY, 28 MAY, 2 JUNE, & 8-11 JUNE.  
 SOURCECODE: F87SHE01MTUS S87SHEUMMTUS P87SHE01MTUS  
 DATASENS: N BOUNDARIES: Y PHOTOS: Y OWNERINFO:  
 TRANSCRIBR: 87-07-07 JEG CDREV: Y MAPPER: 87-07-09 JEG OC: Y  
 UPDATE: 88-02-09 JSS



## ELEMENT OCCURRENCE RECORD

EOCODE: PDBRA1N1Z0.023  
 NAME: LESQUERELLA KLAUSII  
 COMNAME: KLAUS' BLADDERPOD  
 MARGNUM: 5 TENTEN: 5,8 IDENT: Y EORANK: B  
 EORANKCOMM: FAIRLY UNDISTURBED SITES, BUT POPULATIONS NOT VERY LARGE.  
 SURVEYDATE: 1987-06-11 LASTOBS: 1987-06-11 FIRSTOBS: 1987 GRANK: G3  
 SRANK: S3 STATE: MT COUNTYNAME: MLEWI  
 QUADCODE: 4711224  
 QUADNAME: BLOWOUT MOUNTAIN PRECISION: SC  
 LAT: 470942 LONG: 1122628 S: 470940 N: 471029 E: 1122610 W: 112270  
 TOWNRANGE: 016N007W SECTION: 12 MERIDIAN: PR  
 TRSCOMM: NW4,11NE4,1NW4 PHYSPROV: NR WATERSHED: 17010203  
 DIRECTIONS: RED MOUNTAIN, AND RIDGES SOUTH AND WEST OF SUMMIT, NORTH OF  
 ALICE CREEK BASIN, ABOUT 1.4-2.1 AIR MILES NNN OF LEWIS AND  
 CLARK PASS.  
 GENDESC: OPEN ROCKY SLOPES AND RIDGES; LIMESTONE, GRANITIC, AND RED  
 SEDIMENTARY ROCKS; PINUS FLEXILIS/ABIES LASIOCARPA, WITH  
 PHYSARIA DIDYMOCARPA, TOWNSENDIA PARRYI, SENECIO CANUS.  
 ELEV: 7100 SIZE: 30  
 EODATA: ABOUT 600-800+ PLANTS, IN 4 SUBPOPULATIONS; LIVESTOCK  
 GRAZING IMPACTS IN SOME PORTIONS OF SITE; FLOWERS AND EARLY  
 FRUIT.  
 COMMENTS: VOUCHER-SHELLY, J.S. (1331), 1987, MONTU.  
 ALSO WATERSHED 10030102.  
 MACODE1: FFSNFHELE1MTUS CONTAINED1: N MACODE2: FFSNFLEWI1MTUS CONTAINED2: N  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPRO  
 MOREMGMT: SITECODE:  
 SITENAME: RED MOUNTAIN  
 OWNER: HELENA AND LEWIS & CLARK NFs.  
 OWNERCOMM:  
 PROTCOMM:  
 MGMTCOMM:  
 MONITOR: MONITORNUM:  
 BESTSOURCE: SHELLY, J.S. 1987. FIELD SURVEYS IN LEWIS & CLARK AND  
 MEAGHER COS. OF 15 MAY, 28 MAY, 2 JUNE, & 8-11 JUNE.  
 SOURCECODE: F87SHE01MTUS P87SHE01MTUS S87SHEUMMTUS  
 DATASENS: N BOUNDARIES: Y PHOTOS: Y OWNERINFO:  
 TRANSCRIBR: 87-08-06 JSS CDREV: Y MAPPER: 87-08-10 JEG OC: Y  
 UPDATE: 88-02-09 JSS

## ELEMENT OCCURRENCE RECORD

ECODE: PDBRAIN1Z0.024  
 NAME: LESQUERELLA KLAUSII  
 COMNAME: KLAUS' BLADDERPOD  
 MARGNUM: 1 TENTEN: 6,8 IDENT: Y EORANK: C  
 EORANKCOMM: SMALL POPULATIONS, BUT HABITAT IN GOOD CONDITION.  
 SURVEYDATE: 1987-09-13 LASTOBS: 1987-09-13 FIRSTOBS: 1987 GRANK: G3  
 SRANK: S3 STATE: MT COUNTYNAME: MTLERI  
 QUADCODE: 4611281  
 QUADNAME: SHEEP CREEK PRECISION: SC  
 LAT: 465408 LONG: 1120255 S: 465406 N: 465441 E: 1120253 W: 112032  
 TOWNRANGE: 013N004W SECTION: 12 MERIDIAN: PR  
 TRSCOMM: NE4,1SW4 PHYSPROV: NR WATERSHED: 10030101  
 DIRECTIONS: NORTH OF HILGER VALLEY, ON RIDGELINE BETWEEN TOWHEAD GULCH  
 AND LEVINGS GULCH, CA. 2.5 AIR MILES NE OF I-15.

GENDESC: ON OPEN, ROCKY RIDGELINES, IN THIN GRAVELLY SOIL; WITH  
 PSEUDOTSUGA MENZIESII, AGROPYRON SPICATUM, ERIOGONUM  
 OVALIFOLIUM, SENECIO CANUS.

ELEV: 6240 SIZE: 2  
 EODATA: EST. 20-30 PLANTS, IN TWO SMALL SUBPOPULATIONS; PLANTS IN  
 VEGETATIVE CONDITION; SOME ORV AND GRAZING USE IN AREA.

COMMENTS: SIGHT RECORD; ADDITIONAL SURVEYS IN AREA NEEDED.

MACODE1: FBLRAHEAD1MTUS CONTAINED1: N MACODE2: FBLDOBUTT1MTUS CONTAINED2: N  
 MACODE3: PRIVATEOWNMTUS CONTAINED3: N ADLMAS: N MORELAN: MOREPRO

MOREMGMT: SITECODE:  
 SITENAME: SIEBEN RANCH RIDGE  
 OWNER: BLM; SIEBEN RANCH  
 OWNERCOMM:  
 PROTCOMM:  
 MGMTCOMM:  
 MONITOR: MONITORNUM:  
 BESTSOURCE: SHELLY, J.S. MTNHP, STATE LIBRARY, 1515 E. 6TH AVE., HELENA,  
 MT 59620.  
 SOURCECODE: PNDSE01MTUS

DATASENS: N BOUNDARIES: Y PHOTOS: N OWNERINFO:  
 TRANSCRIBR: 87-09-21 JSS CDREV: Y MAPPER: 87-09-23 JEG OC: Y  
 UPDATE: 88-02-09 JSS

## ELEMENT OCCURRENCE RECORD

EOCODE: PDBRAINIZ0.025  
 NAME: LESQUERELLA KLAUSII  
 COMNAME: KLAUS' BLADDERPOD  
 MARGNUM: 10 TENTEN: 1,8 IDENT: Y EORANK: C  
 EORANKCOMM: SMALL POPULATION, BUT HABITAT IN GOOD CONDITION.  
 SURVEYDATE: 1987-09-29 LASTOBS: 1987-09-29 FIRSTOBS: 1987 GRANK: G3  
 SRANK: S3 STATE: MT COUNTYNAME: MTLWI  
 QUADCODE: 4611176  
 QUADNAME: HOGBACK MOUNTAIN PRECISION: SC  
 LAT: 464629 LONG: 1114446 S: 464626 N: 464632 E: 1114440 W: 1114440  
 TOWNRANGE: 012N001W SECTION: 28 MERIDIAN: PR  
 TRSCOMM: NW4NW4 PHYSPROV: NR WATERSHED: 10030101  
 DIRECTIONS: BIG BELT MOUNTAINS, SOUP CREEK DRAINAGE, CA. 2.0 AIR MILES  
 NORTHEAST OF HELENA NF ROAD #224, CA. 3.5 AIR MILES NORTH OF  
 YORK.  
 GENDESC: STEEP SOUTH AND SOUTHEAST-FACING SLOPE, SHALE RUBBLE SCREE;  
 WITH PINUS PONDEROSA, RHUS TRILOBATA, AGROPYRON SPICATUM,  
 CHRYSOTHAMNUS NAUSEOSUS, PHACELIA HASTATA.  
 ELEV: 4700 SIZE: 5  
 EODATA: ONE POPULATION, CA. 25-30 PLANTS; HABITAT LARGELY  
 UNDISTURBED; MAY BE MORE PLANTS ON SLOPE TO THE SOUTHWEST.  
 COMMENTS: ADDITIONAL SURVEYS NEEDED IN AREA IN EARLY SUMMER.  
 MACODE1: FFSNFHELE1MTUS CONTAINED1: MACODE2: PRIVATEOWNMTUS CONTAINED2:  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPRO:  
 MOREMGMT: SITECODE:  
 SITENAME: SOUP CREEK WEST  
 OWNER: HELENA NATIONAL FOREST  
 OWNERCOMM:  
 PROTCOMM: POPULATION MAY PARTIALLY EXTEND ONTO PRIVATE LAND.  
 MGMTCOMM:  
 MONITOR: MONITORNUM:  
 BESTSOURCE: SHELLY, J.S. 1987. FIELD SURVEY TO CABIN GULCH PRNA, BIG  
 BELT MOUNTAINS, OF 29 SEPTEMBER.  
 SOURCECODE: F87SHE06MTUS PND87SHE01MTUS PNDKRA01MTUS PND0LS01MTUS  
 DATASENS: N BOUNDARIES: Y PHOTOS: N OWNERINFO:  
 TRANSCRIBR: 87-09-29 JSS CDREV: Y MAPPER: 87-10-22 JSS OC: Y  
 UPDATE: 88-02-09 JSS

## ELEMENT OCCURRENCE RECORD

EDCODE: PDBRAIN1Z0.026  
 NAME: LESQUERELLA KLAUSII  
 COMNAME: KLAUS' BLADDERPOD  
 MARGNUM: 11 TENTEN: 3,7 IDENT: Y EORANK: B  
 EORANKCOMM: FAIRLY LARGE POPULATION, GOOD-EXCELLENT CONDITION HABITAT.  
 SURVEYDATE: 1987-09-29 LASTOBS: 1987-09-29 FIRSTOBS: 1987 GRANK: 63  
 SRANK: 53 STATE: MT COUNTYNAME: MTLWEI  
 QUADCODE: 4611176  
 QUADNAME: HOGBACK MOUNTAIN PRECISION: SC  
 LAT: 464729 LONG: 1114326 S: 464726 N: 464731 E: 1114315 W: 11143.  
 TOWNRANGE: 012N001W SECTION: 15 MERIDIAN: PR  
 TRSCOMM: S2SW4,22N2NW4 PHYSPROV: NR WATERSHED: 10030101  
 DIRECTIONS: BIG BELT MOUNTAINS, SOUP CREEK DRAINAGE, CA. 4 MILES NORTH-  
 EAST OF HELENA NF ROAD #224, CA. 5 AIR MILES NNE OF YORK.

GENDESC: STEEP SOUTH TO SOUTHEAST-FACING SLOPE, SHALE RUBBLE SOILS;  
 WITH PINUS PONDEROSA, PSEUDOTSUGA MENZIESII, AGROPYRON  
 SPICATUM, SENECIO CANUS.

ELEV: 5400 SIZE: 5  
 EODATA: EST. 300-400+ PLANTS (249 INDIVIDUALS COUNTED); HABITAT  
 UNDISTURBED; POST-FRUITING.

COMMENTS: ADDITIONAL SURVEYS NEEDED IN AREA IN EARLY SUMMER; SITE MAY  
 PARTIALLY EXTEND ONTO PRIVATE LAND.

MACODE1: FFSRPCABI1MTUS CONTAINED1: MACODE2: FFSNFHELE1MTUS CONTAINED2:  
 MACODE3: PRIVATEDOWNMTUS CONTAINED3: ? ADLMAS: N MORELAN: MOPEPRO

MOREMGMT: SITECODE:  
 SITENAME: SOUP CREEK EAST  
 OWNER: HELENA NATIONAL FOREST; PVT?.  
 OWNERCOMM:  
 PROTCOMM: SITE IS IN CABIN GULCH PROPOSED RESEARCH NATURAL AREA.  
 MGMTCOMM:

MONITOR: MONITORNUM:  
 BESTSOURCE: SHELLY, J.S. 1987. FIELD SURVEY TO CABIN GULCH PRNA, BIG  
 BELT MOUNTAINS, OF 29 SEPTEMBER.  
 SOURCECODE: F87SHE06MTUS PND8SHE01MTUS PNDKRA01MTUS PNDOLS01MTUS

DATASENS: N BOUNDARIES: Y PHOTOS: N OWNERINFO:  
 TRANSCRIBR: 87-10-01 JSS CDREV: Y MAPPER: 87-10-22 JSS QC: Y  
 UPDATE: 88-02-09 JSS

## ELEMENT OCCURRENCE RECORD

EOCODE: PDBRAINIZ0.027  
 NAME: LESQUERELLA KLAUSII  
 CONNAME: KLAUS' BLADDERPOD  
 MARGNUM: 1 TENTEN: 5,7 IDENT: Y EORANK: C  
 EORANKCOMM: MODERATE POPULATION, ADJACENT TO HIGHWAY.  
 SURVEYDATE: 1987-05-09 LASTOBS: 1987-06-03 FIRSTOBS: 1987 GRANK: G3  
 SRANK: S3 STATE: MT COUNTYNAME: MLEWI  
 QUADCODE: 4711223  
 QUADNAME: JOHNSON MOUNTAIN PRECISION: SC  
 LAT: 471017 LONG: 1121849 S: 471011 N: 471025 E: 1121837 W: 112190  
 TOWNRANGE: 016N006W SECTION: 01 MERIDIAN: PR  
 TRSCOMM: NW4,2NE4 PHYSPROV: NR WATERSHED: 10030102  
 DIRECTIONS: MIDDLE FORK DEARBORN RIVER DRAINAGE, NW OF STATE HWY 200,  
 CA. 0.2 MILES SOUTHWEST OF BRIDGE OVER RIVER, CA. 8 MILES  
 NORTHEAST OF ROGERS PASS.  
 GENDESC: LOW, GRAVELLY RIDGELINE, VERY SPARSELY VEGETATED; WITH  
 PHACELIA HASTATA, ERIOGONUM, ALYSSUM ALYSSOIDES, AGROPYRON  
 SPICATUM.  
 ELEV: 4480 SIZE: 20  
 EODATA: PLANTS SCATTERED, CA. 101-1000 INDIVIDUALS (LESICA, 1987);  
 VERY FEW PLANTS (< 10) OBSERVED ON 1987-06-03 (SHELLY); SOME  
 EVIDENCE OF LIGHT LIVESTOCK GRAZING.

## COMMENTS:

MACODE1: PRIVATEOWNMTUS CONTAINED1: Y MACODE2: CONTAINED2:  
 MACODE3: CONTAINED3: ADLMAS: MORELAN: MOREPROT

MOREMGMT: SITECODE:  
 SITENAME: MIDDLE FORK DEARBORN RIVER  
 OWNER: PRIVATE LAND  
 OWNERCOMM:  
 PROTCOMM:  
 MGMTCOMM:  
 MONITOR: MONITORNUM:  
 BESTSOURCE: LESICA, P. DEPARTMENT OF BOTANY, UNIVERSITY OF MONTANA,  
 MISSOULA, MT 59812. (4221), WITH LISA CAMPBELL. 1987. MONTU.  
 SOURCECODE: PNDLES01MTUS PNDSE01MTUS S87LESUMMTUS PNDCAM01MTUS

DATASENS: N BOUNDARIES: Y PHOTOS: N OWNERINFO:  
 TRANSCRIBR: 87-10-22 JSS CDREV: Y MAPPER: 87-10-22 JSS OC: Y  
 UPDATE: 88-02-09 JSS



MAFUD  
66512  
SUNIL ROY

DUO-TANG  
51258  
MADE IN U.S.A.